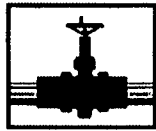


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# REPORTS

DATE:

Nov. 2010



**PLAINS**  
PIPELINE, L.P.

RECEIVED OCD

2011 APR 21 P 12:39

January 5, 2011

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

RE: Plains Pipeline, L.P. 14-inch Vac to Jal Legacy Site  
NMOCD Reference # 1RP-2162  
Unit Letter F of Section 25, Township 25 South, Range 37 East  
Lea County, New Mexico

Dear Mr. Hansen:

Plains Pipeline, L.P. is pleased to submit the attached *Remediation Summary and Site Closure Request*, dated November 2010, for the 14-inch Vac to Jal Legacy site. This site is located in Section 25 of Township 25 South, and Range 37 East of Lea County, New Mexico. This document details the soil remediation activities performed at the site.

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 Service Technologies, LLC***

3100 Plains Highway  
P. O. Box 301  
Lovington, New Mexico 88260

**bjarguijo@basinenv.com**

Office: (575) 396-2378 Fax: (575) 396-1429



## **REMEDATION SUMMARY RECEIVED AND SITE CLOSURE REQUEST**

APR 21 2011

**PLAINS PIPELINE, LP (231735)**

**14-Inch Vac to Jal Legacy**

**Lea County, New Mexico**

**Plains SRS # 2009-092**

**UNIT LTR "F" (SE ¼ /NW ¼ ), Section 25, Township 25 South, Range 37 East**

**Latitude 32° 06' 10.7" North, Longitude 103° 07' 10.3" West**

**NMOCD Reference # 1RP-2162**

Oil Conservation Division  
1220 S. St. Francis Drive  
Santa Fe, NM 87505

Prepared For:

Plains Pipeline, LP  
333 Clay Street  
Suite 1600  
Houston, Texas 77002

Prepared By:

Basin Environmental Service Technologies, LLC  
3100 Plains Highway  
Lovington, New Mexico 88260

**November 2010**

Ben J. Arguijo  
Project Manager

## TABLE OF CONTENTS

|   |    |
|---|----|
| 1.0 INTRODUCTION AND BACKGROUND INFORMATION.....              | 1  |
| 2.0 NMOCD SITE CLASSIFICATION.....                            | 1  |
| 3.0 DISTRIBUTION OF CONTAMINANTS IN THE UNSATURATED ZONE..... | 2  |
| 3.1 Summary of Soil Remediation Activities.....               | 2  |
| 3.2 Soil Closure Request.....                                 | 10 |
| 4.0 DISTRIBUTION OF CONTAMINANTS IN THE SATURATED ZONE.....   | 10 |
| 4.1 Summary of Groundwater Remediation Activities.....        | 10 |
| 4.2 Groundwater Closure Request.....                          | 12 |
| 5.0 QA/QC PROCEDURES.....                                     | 13 |
| 5.1 Soil Sampling.....  | 13 |
| 5.2 Groundwater Sampling.....                                 | 13 |
| 5.3 Decontamination of Equipment.....                         | 13 |
| 5.4 Laboratory Protocol.....                                  | 13 |
| 6.0 SITE CLOSURE REQUEST.....                                 | 14 |
| 7.0 LIMITATIONS.....  | 14 |
| 8.0 DISTRIBUTION.....   | 15 |

## FIGURES

Figure 1 – Site Location Map

Figure 2 – Site and Sample Location Map

## TABLES

Table 1 – Concentrations of Benzene, BTEX and TPH in Soil

Table 2 – Concentrations of Benzene, BTEX, Chlorides and Total Dissolved Solids in  
Groundwater

Table 3 – Groundwater Elevation Data

## APPENDICES

Appendix A – Soil Boring and Monitor Well Logs

Appendix B – Analytical Reports

Appendix C – Photographs

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

Appendix E – Release Notification and Corrective Action (Form C-141, Final)



## **1.0 INTRODUCTION AND BACKGROUND INFORMATION**

Basin Environmental Service Technologies, LLC (Basin), on behalf of Plains Pipeline, LP (Plains), has prepared this "Remediation Summary and Site Closure Request" for the release site known as 14-Inch Vac to Jal Legacy (SRS # 2009-092). The legal description of the release site is Unit Letter "F" (SE ¼ NW ¼), Section 25, Township 25 South, Range 37 East, in Lea County, New Mexico. The property affected by the release is owned by Legacy Reserves, LP. The release site GPS coordinates are 32° 06' 10.7" North and 103° 07' 10.3" West. Please reference Figure 1 for a "Site Location Map" and Figure 2 for a "Site and Sample Location Map". The "Release Notification and Corrective Action" (Form C-141) is provided as Appendix D.

On April 9, 2009, Plains discovered a crude oil release from a fourteen (14)-inch steel pipeline. The cause of the release was attributed to external corrosion of the pipeline and was reported to the New Mexico Oil Conservation Division (NMOCD) on April 9, 2009. During initial response activities, Plains installed a temporary clamp on the pipeline to mitigate the release. Approximately two hundred fifty (250) barrels of crude oil was released from the pipeline, with no recovery. General photographs of the site are provided as Appendix C.

The release site is bisected by two (2) fourteen (14) inch Plains pipelines that run parallel through the site. Due to safety concerns associated with excavating and supporting the two (2) large diameter pipelines, Plains requested and received NMOCD approval to leave the soil beneath and adjacent to the Plains pipelines in-situ.

The 14-Inch Vac to Jal release site is located approximately 1,147 feet to the south-southeast of a documented groundwater remediation site (Arco South Justis Unit F-230). Information regarding this site can be found on the NMOCD imaging system.

## **2.0 NMOCD SITE CLASSIFICATION**

According to data obtained from the New Mexico Office of the State Engineer (NMOSE), no water wells are registered in Section 25, Township 25S, Range 37E. A depth to groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately fifty five (55) feet below ground surface (bgs). Soil boring (SB-1) was advanced by Plains and subsequently converted to a groundwater monitor well (MW-1). Groundwater was encountered at a depth of approximately sixty five (65) feet bgs in monitor well MW-1. The analytical results of the soil samples collected during the advancement of the soil boring, indicated hydrocarbon impact exceeding the NMOCD regulatory standard, was present at the groundwater interface. The depth of hydrocarbon impact results in a score of twenty (20) being assigned to the site based on the NMOCD depth to groundwater criteria.

A search of the water well database maintained by the NMOSE indicated there are no water wells within 1,000 feet of the release, resulting in zero (0) points being assigned to this site as a result of this criteria.

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

The NMOCD guidelines indicate the 14-Inch Vac to Jal Legacy release site had an initial ranking score of twenty (20), which would set the remediation levels for the site at 10 mg/Kg for benzene, 50 mg/Kg for BTEX, and 100 mg/Kg for TPH. However, based on discussions with the NMOCD Hobbs District representative, site-specific risk-based remediation levels were established for the site. The remediation levels established for the site were 10 mg/Kg for benzene, 50 mg/Kg for BTEX, and 100 mg/Kg for TPH for the sidewalls, and 10 mg/Kg for benzene, 50 mg/Kg for BTEX, and 5,000 mg/Kg for TPH for the backfill material. Due to the close proximity of an active injection well and several pipelines, the NMOCD Hobbs District representative agreed to allow contaminant concentrations above these levels in several places on the floor of the excavation since the quality of the groundwater in this area was considered to be non-abatable.

### **3.0 DISTRIBUTION OF CONTAMINANTS IN THE UNSATURATED ZONE**

#### **3.1 Summary of Soil Remediation Activities**

On April 9, 2009, following initial response activities, excavation of the hydrocarbon-impacted soil began at the site. Approximately 18,000 cubic yards (cy) of impacted soil was excavated and stockpiled on-site, pending final disposition. Final dimensions of the Main Excavation were approximately four hundred (400) feet in length, approximately two hundred (200) feet in width, and five (5) to fourteen (14) feet in depth. The West Excavation measured approximately one hundred fifty (150) feet in length, approximately one hundred five (105) feet in width, and approximately ten (10) feet in depth. The soil beneath and adjacent to the two (2) Plains pipelines was left in-situ due to safety concerns associated with excavating and supporting the two (2) large diameter pipelines.

On April 15, 2009, a soil sample (Chloride Baseline) was collected from the stockpiled material to determine chloride concentration of the soil. The soil sample was submitted to the laboratory for chloride analysis using EPA Method 300. The analytical results indicated a chloride concentration of 796 mg/kg. Table 1 summarizes the "Concentrations of Benzene, BTEX, TPH & Chlorides in Soil". Analytical reports are provided as Appendix B.

On May 18, 2009, two (2) soil samples (Stockpile #1 and Stockpile #2) were collected from the stockpiled material and submitted to the laboratory for analysis. The soil samples were analyzed for concentrations of benzene, toluene, ethyl-benzene and xylenes (BTEX) and total petroleum hydrocarbons (TPH) using EPA Method SW 846-8021b and EPA Method SW 846-8015M, respectively. Laboratory analytical results indicated benzene concentrations of 3.549 mg/kg for soil sample Stockpile #1 and 23.2 mg/kg for soil sample Stockpile #2. BTEX concentrations were 275.569 mg/kg for soil sample Stockpile #1 and 545.4 mg/kg for soil sample Stockpile #2. TPH concentrations were 8,880 mg/kg for soil sample Stockpile #1 and 18,269 mg/kg for soil sample Stockpile #2.

On May 18, 2009, four (4) soil samples (Main Exc. NWSW, Main Exc. NESW, Main Exc. WSW and Main Exc. ESW) were collected from the Main Excavation sidewalls at depths ranging from 4.5 feet to 9 feet bgs. The soil samples were submitted to the laboratory for determination of BTEX and TPH constituent concentrations. Laboratory analytical results indicated benzene concentrations ranged from less than the appropriate laboratory method detection limit (MDL) for soil samples Main Exc. WSW and Main Exc. ESW to 0.0073 mg/kg

for soil sample Main Exc. NWSW. BTEX concentrations ranged from less than the appropriate laboratory MDL for soil samples Main Exc. WSW and Main Exc. ESW to 0.0924 mg/kg for soil sample Main Exc. NWSW. TPH concentrations ranged from less than the laboratory MDL for soil sample Main Exc. WSW to 43.3 mg/kg for soil sample Main Exc. NESW. Please reference Figure 2 for the "Site and Sample Location Map".

Four (4) soil samples (Main Exc. Floor #1, Main Exc. Floor #2, Main Exc. Floor #3 and Main Exc. Floor #4) were also collected from the floor of the Main Excavation and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations ranged from less than the laboratory MDL for soil sample Main Exc. Floor #2 to 9.459 mg/kg for soil sample Main Exc. Floor #4. BTEX concentrations ranged from 0.0046 mg/kg for soil sample Main Exc. Floor #1 to 371.119 mg/kg for soil sample Main Exc. Floor #4. TPH concentrations ranged from 19.8 mg/kg for soil sample Main Exc. Floor #1 to 13,233 mg/kg for soil sample Main Exc. Floor #4.

On May 26, 2009, nine (9) trenches were excavated to vertically and horizontally investigate the extent of hydrocarbon-impacted soil at the site. Selected soil samples were submitted to the laboratory for determination of BTEX and TPH concentrations.

Trench T-1 was located in the northeast corner of the Main Excavation. The trench was completed to a total depth of approximately ten (10) feet bgs. One (1) soil sample (T-1 @ 10' bgs) was collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene, BTEX, and TPH concentrations were less than the appropriate laboratory MDL.

Trench T-2 was located in the eastern portion of the Main Excavation. The trench was completed to a total depth of approximately eighteen (18) feet bgs. Three (3) soil samples (T-2 @ 12' bgs, T-2 @ 14' bgs, and T-2 @ 18' bgs) were collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations ranged from 0.0023 mg/kg for soil sample T-2 @ 18' bgs to 34.76 mg/kg for soil sample T-2 @ 12' bgs. BTEX concentrations ranged from 0.0353 mg/kg for soil sample T-2 @ 18' bgs to 930.1 mg/kg for soil sample T-2 @ 12' bgs. TPH concentrations ranged from 131.3 mg/kg for soil sample T-2 @ 18' bgs to 28,240 mg/kg for soil sample T-2 @ 12' bgs.

Trench T-3 was located in the western portion of the Main Excavation. The trench was completed to a total depth of approximately thirty (30) feet bgs. Six (6) soil samples (T-3 @ 12' bgs, T-3 @ 14' bgs, T-3 @ 18' bgs, T-3 @ 22', T-3 @ 26' bgs, and T-3 @ 30' bgs) were collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations ranged from less than the appropriate laboratory MDL for soil samples T-3 @ 26' bgs and T-3 @ 30' bgs to 11.28 mg/kg for soil sample T-3 @ 18' bgs. BTEX concentrations ranged from 0.0568 mg/kg for soil sample T-3 @ 22' bgs to 255.439 mg/kg for soil sample T-3 @ 14' bgs. TPH concentrations ranged from 59 mg/kg for soil sample T-3 @ 22' bgs to 18,110 mg/kg for soil sample T-3 @ 18' bgs.

Trench T-4 was located in the southern portion of the Main Excavation. The trench was completed to a total depth of approximately thirty (30) feet bgs. Six (6) soil samples (T-4 @ 12' bgs, T-4 @ 14' bgs, T-4 @ 18' bgs, T-4 @ 22' bgs, T-4 @ 26' bgs, and T-4 @ 30' bgs) were collected from the trench and submitted to the laboratory for analysis. Laboratory analytical

results indicated benzene concentrations ranged from 8.783 mg/kg for soil sample T-4 @ 14' to 48.18 mg/kg for soil sample T-4 @ 12' bgs. BTEX concentrations ranged from 303.923 mg/kg for soil sample T-4 @ 14' bgs to 1,097.58 mg/kg for soil sample T-4 @ 12' bgs. TPH concentrations ranged from 8,224 mg/kg for soil sample T-4 @ 14' bgs to 37,550 mg/kg for soil sample T-4 @ 12' bgs.

Trench T-5 was located in the southern portion of the West Excavation. The trench was completed to a total depth of approximately fourteen (14) feet bgs. One (1) soil sample (T-5 @ 14' bgs) was collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated a benzene concentration of 0.0078 mg/kg, a BTEX concentration of 0.0119 mg/kg, and a TPH concentration of 32 mg/kg.

Trench T-6 was located at the release point to a total depth of approximately eighteen (18) feet bgs. Three (3) soil samples (T-6 @ 10' bgs, T-6 @ 14' bgs, and T-6 @ 18' bgs) were collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations ranged from less than the laboratory MDL for soil sample T-6 @ 18' bgs to 1.999 mg/kg for soil sample T-6 @ 10' bgs. BTEX concentrations ranged from 0.006 mg/kg for soil sample T-6 @ 18' bgs to 89.099 mg/kg for soil sample T-6 @ 10' bgs. TPH concentrations ranged from 28.3 mg/kg for soil sample T-6 @ 14' bgs to 3,996 mg/kg for soil sample T-6 @ 10' bgs.

Trench T-7 was located to the north of the release point adjacent to the Plains pipelines. The trench was completed to a total depth of approximately eighteen (18) feet bgs. Three (3) soil samples (T-7 @ 10' bgs, T-7 @ 14' bgs, and T-7 @ 18' bgs) were collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations ranged from less than the laboratory MDL for soil sample T-7 @ 18' bgs to 9.257 mg/kg for soil sample T-7 @ 10' bgs. BTEX concentrations ranged from 153.34 mg/kg for soil sample T-7 @ 18' bgs to 212.818 mg/kg for soil sample T-7 @ 14' bgs. TPH concentrations ranged from 9,061 mg/kg for soil sample T-7 @ 18' bgs to 9,840 mg/kg for soil sample T-7 @ 10' bgs.

Trench T-8 was located in the central portion of the Main Excavation. The trench was completed to a total depth of approximately fourteen (14) feet bgs. Two (2) soil samples (T-8 @ 10' bgs, and T-8 @ 14' bgs) were collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene, BTEX, and TPH concentrations were less than the appropriate laboratory MDL, with the exception of soil sample T-8 @ 10' bgs, which exhibited a TPH concentration of 91.7 mg/kg.

Trench T-9 was located in the southeast corner of the Main Excavation. The trench was completed to a total depth of approximately fourteen (14) feet bgs. Two (2) soil samples (T-9 @ 10' bgs, and T-9 @ 14' bgs) were collected from the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations ranged from 0.0062 mg/kg for soil sample T-9 @ 14' bgs to 0.0072 mg/kg for soil sample T-9 @ 10' bgs. BTEX concentrations ranged from 0.0249 mg/kg for soil sample T-9 @ 14' bgs to 1.3389 mg/kg for soil sample T-9 @ 10' bgs. TPH concentrations ranged from 106 mg/kg for soil sample T-9 @ 14' bgs to 4,751 mg/kg for soil sample T-9 @ 10' bgs.

On May 28, 2009, four (4) soil samples (Main Exc. ESW-1 @ 8' bgs, Main Exc. ESW-2 @ 5' bgs, Main Exc. ESW-3 @ 3' bgs, and Main Exc. SSW @ 9.5' bgs) were collected from the Main Excavation sidewalls and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene, BTEX, and TPH concentrations were less than the appropriate laboratory MDL for all the soil samples submitted, with the exception of soil samples Main Exc. ESW-1 @ 8' bgs and Main Exc. ESW-3 @ 3' bgs, which exhibited TPH concentrations of 38.8 mg/kg and 86.2 mg/kg, respectively. Based on these results, the horizontal extent of impacted soils appeared to have been delineated in all directions.

Based on the analytical results of the soil samples collected from the delineation trenches, further investigation of the vertical extent of hydrocarbon-impacted soil at the site was warranted.

On July 1 and 2, 2009, three (3) soil borings (SB-1, SB-2, and SB-3) were advanced at the site to further delineate the vertical extent of hydrocarbon-impacted soil at the site. Soil boring logs are provided as Appendix A. Soil samples were collected at five (5) foot drilling intervals and field screened using a Photo-Ionization Detector (PID). Selected soil samples were submitted to the laboratory for determination of concentrations of BTEX, TPH, and chlorides.

Soil boring SB-1 was located in the southern portion of the Main Excavation at approximately ten (10) feet bgs and advanced to a total depth of approximately seventy (70) feet bgs. Soil samples collected at drilling depths of five (5) feet, fifteen (15) feet, twenty five (25) feet, thirty five (35) feet, forty five (45) feet, fifty (50) feet, and fifty five (55) feet were submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations ranged from less than the appropriate laboratory MDL for soil samples SB-1/MW-1 @ 45', SB-1/MW-1 @ 50', and SB-1/MW-1 @ 55' to 1.447 mg/kg for soil sample SB-1/MW-1 @ 5'. BTEX concentrations ranged from 0.0025 mg/kg for soil sample SB-1/MW-1 @ 50' to 79.4979 mg/kg for soil sample SB-1/MW-1 @ 25'. TPH concentrations ranged from 445 mg/kg for soil sample SB-1/MW-1 @ 55' to 9,655 mg/kg for soil sample SB-1/MW-1 @ 25'. Chloride concentrations ranged from 10.3 mg/kg for soil sample SB-1/MW-1 @ 25' to 179 mg/kg for soil sample SB-1/MW-1 @ 55'.

Groundwater was encountered at approximately fifty four (54) feet drilling depth, or approximately sixty four (64) feet bgs, in SB-1. On July 1, 2009, soil boring SB-1 was converted to monitor well MW-1.

Soil boring SB-2 was located in the northwest portion of the Main Excavation at approximately ten (10) feet bgs. The soil boring was advanced to a total depth of approximately seventy (70) feet bgs. Soil samples collected at drilling depths of five (5) feet, fifteen (15) feet, twenty five (25) feet, thirty five (35) feet, forty five (45) feet, fifty (50) feet, and fifty five (55) feet were submitted to the laboratory for analysis. The laboratory analytical results indicated benzene concentrations were less than the appropriate laboratory MDL in all the submitted soil samples, with the exception of soil sample SB-2 @ 15', which exhibited a benzene concentration of 0.2671 mg/kg. BTEX concentrations ranged from less than the appropriate laboratory MDL for soil samples SB-2 @ 45', SB-2 @ 50', and SB-2 @ 55' to 26.391 mg/kg for soil sample SB-2 @ 5'. TPH concentrations ranged from 57.8 mg/kg for soil sample SB-2 @ 35' to 4,655 mg/kg for soil sample SB-2 @ 5'. Chloride concentrations ranged from less than the laboratory MDL for soil sample SB-2 @ 35' to 952 mg/kg for soil sample SB-2 @ 55'.

Groundwater was encountered at approximately fifty four (54) feet drilling depth, or approximately sixty four (64) feet bgs, in soil boring SB-2. A temporary casing was installed in the soil boring to allow a "preliminary" groundwater sample to be collected for analysis. On July 2, 2009, a groundwater sample (Prelim GW SB-2) was collected from the temporary casing and submitted to the laboratory for analysis. Following the collection of the groundwater sample, the temporary casing was removed from the soil boring, and the soil boring was plugged with cement and bentonite, as required by the NMOSE. A description of the analytical results of the collected groundwater sample (Prelim GW SB-2) is included in the "Summary of Groundwater Remediation Activities" below.

Soil boring SB-3 was located to the north of the release point adjacent to the Plains pipeline and advanced to a total depth of approximately seventy (70) feet bgs. Soil samples collected at five (5) feet, fifteen (15) feet, twenty five (25) feet, thirty five (35) feet, forty five (45) feet, fifty (50) feet, fifty five (55) feet, and sixty (60) feet were submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations were less than the laboratory MDL for all the submitted soil samples, with the exception of soil sample SB-3 @ 5', which exhibited a benzene concentration of 0.0644 mg/kg. BTEX concentrations ranged from less than the laboratory MDL for soil sample SB-3 @ 35' to 17.728 mg/kg for soil sample SB-3 @ 25'. TPH concentrations ranged from 72.2 mg/kg for soil sample SB-3 @ 50' to 6,226 mg/kg for soil sample SB-3 @ 5'. Chloride concentrations ranged from 8.94 mg/kg for soil sample SB-3 @ 50' to 152 mg/kg for soil sample SB-3 @ 5'.

Groundwater was encountered at approximately sixty four (64) feet bgs in soil boring SB-3. A temporary casing was installed in the soil boring to allow a "preliminary" groundwater sample to be collected for analysis. On July 2, 2009, a groundwater sample (Prelim GW SB-3) was collected from the temporary casing and submitted to the laboratory for analysis. Following the collection of the groundwater sample, the temporary casing was removed from the soil boring, and the soil boring was plugged with cement and bentonite, as required by the NMOSE. A description of the analytical results of the collected groundwater sample (Prelim GW SB-3) is included in the "Summary of Groundwater Remediation Activities" below.

On September 18, 2009, approximately five hundred (500) cubic yards of impacted soil was placed in a treatment cell and treated by blending and aeration methods.

On September 24, 2009, one (1) soil sample (Treatment Cell #1) was collected from the treatment cell and submitted to the laboratory for analysis. Laboratory analytical results indicated a benzene concentration of 1.539 mg/kg, a BTEX concentration of 136.31 mg/kg, and a TPH concentration of 11,310 mg/kg.

On September 30, 2009, three (3) soil samples (West Exc. NSW-1, West Exc. WSW-1, and West Exc. SSW-1) were collected from the West Excavation sidewalls and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene, BTEX, and TPH concentrations were less than the appropriate laboratory MDL for all the submitted soil samples, with the exception of soil sample West Exc. SSW-1, which exhibited a TPH concentration of 20.7 mg/kg. Two (2) soil samples (West Exc. Floor-1 and West Exc. Floor-2) were also collected from the floor of the excavation and submitted to the laboratory for analysis. The laboratory analytical results indicated benzene, BTEX, and TPH concentrations were less than the appropriate laboratory MDL for all of the submitted soil samples.

On November 10, 2009, at the request of the NMOCD, the excavations were divided into seventy five (75) foot grids. Fourteen (14) soil samples (GP #1 @ 6', GP #2 @ Grade, GP #3 @ Grade, GP #4 @ 5', GP #5 @ 7', GP #6 @ 9', GP #7 @ 9', GP #8 @ 9', GP #9 @ 10', GP #10 @ 7', GP #11 @ 7', GP #12 @ 10', GP #13 @ 10', and GP #14 @ 12') were collected from the Main Excavation grid points and submitted to the laboratory for analysis. Laboratory analytical results indicated TPH concentrations ranged from less than the laboratory MDL for soil sample GP #8 @ 9' to 4,696 mg/kg for soil sample GP #6 @ 9'. Chloride concentrations ranged from less than the appropriate laboratory MDL for soil samples GP #6 @ 9' and GP #12 @ 10' to 3,510 mg/kg for soil sample GP #3 @ Grade.

Two (2) soil samples (GP #15 @ 10' and GP #16 @ 10') were collected from the West Excavation grid points and submitted to the laboratory for analysis. Laboratory analytical results indicated TPH concentrations ranged from less than the laboratory MDL for soil sample GP #16 @ 10' to 69.7 mg/kg for soil sample GP #15 @ 10'. Chloride concentrations ranged from 9.57 mg/kg for soil sample GP #16 @ 10' to 62.9 mg/kg for soil sample GP #15 @ 10'.

On December 10, 2009, two (2) soil borings (SB #4 and SB #5) were installed up-gradient of the excavation to evaluate the potential groundwater impact from an up-gradient, off-site source.

Soil boring SB #4 was located approximately two hundred fifty (250) feet to the north northwest of the site and advanced to a total depth of approximately seventy five (75) feet bgs. Soil samples collected at ten (10) feet, twenty (20) feet, thirty (30) feet, forty (40) feet, and fifty (50) feet were submitted to the laboratory for analysis. Laboratory analytical results indicated chloride concentrations ranged from less than the laboratory MDL for soil sample SB #4 @ 50' to 85.3 mg/kg for soil sample SB #4 @ 10'.

Groundwater was encountered at approximately sixty four (64) feet bgs in soil boring SB #4. A temporary casing was installed in the soil boring to allow a "preliminary" groundwater sample to be collected for analysis. On December 22, 2009, a groundwater sample (SB-4 GW) was collected from the temporary casing and submitted to the laboratory for analysis. Following the collection of the groundwater sample, the temporary casing was removed from the soil boring, and the soil boring was plugged with cement and bentonite, as required by the NMOSE. A description of the analytical results of the collected groundwater sample (SB-4 GW) is included in the "Summary of Groundwater Remediation Activities" below.

Soil boring SB #5 was located approximately seven hundred fifteen (715) feet to the north northwest of the site and advanced to a total depth of approximately eighty (80) feet bgs. Soil samples collected at ten (10) feet, twenty (20) feet, thirty (30) feet, forty (40) feet, and forty five (45) feet were submitted to the laboratory for analysis. Laboratory analytical results indicated chloride concentrations ranged from 6.71 mg/kg for soil sample SB #5 @ 45' to 263 mg/kg for soil sample SB #5 @ 20'.

Groundwater was encountered at approximately sixty four (64) feet bgs in soil boring SB #5. A temporary casing was installed in the soil boring to allow a "preliminary" groundwater sample to be collected for analysis. On December 22, 2009, a groundwater sample (SB-5 GW) was collected from the temporary casing and submitted to the laboratory for analysis. Following the collection of the groundwater sample, the temporary casing was removed from the soil boring,

and the soil boring was plugged with cement and bentonite, as required by the NMOSE. A description of the analytical results of the collected groundwater sample (SB-5 GW) is included in the "Summary of Groundwater Remediation Activities" below.

On April 26, 2010, Plains submitted a "Remediation Summary and Proposed Soil Closure Strategy" (Proposal) to a representative of the NMOCD Hobbs District Office requesting remediation action of levels of 10 mg/kg (ppm) for Benzene, 50 mg/kg (ppm) for BTEX, and 5,000 mg/kg (ppm) for TPH, as detailed in Section 2.0, "NMOCD Site Classification", above. The Proposal was approved by the NMOCD representative, and the proposed closure activities commenced.

On April 28 and 29, 2010, Basin transported approximately 1,440 cy of more heavily impacted soil to Sundance Services, Inc. (NMOCD Permit # NM-01003) for disposal.

On June 3, 2010, Basin resumed soil activities at the site. The stockpiled soil was mechanically screened to separate the large rock from the soil. The separated rock was placed in the floor of the excavation and leveled, the soil was placed in 500 cubic yard stockpiles, and soil samples were collected from each stockpile and submitted to the laboratory for analysis.

On August 4, 2010, two (2) five-point composite soil samples (Screened SP #1 and Screened SP #2) were collected from the stockpiled material and submitted to the laboratory for analysis. The laboratory analytical results indicated benzene concentrations ranged from 0.173 mg/kg for soil sample Screened SP #1 to 0.0297 mg/kg for soil sample Screened SP #2. BTEX concentrations ranged from 2.4404 mg/kg for soil sample Screened SP #1 to 3.722 mg/kg for soil sample Screened SP #2. TPH concentrations ranged from 4,868 mg/kg for soil sample Screened SP #2 to 5,011 mg/kg for soil sample Screened SP #1. Soil represented by soil samples Screened SP #1 and Screened SP #2 was deemed suitable for use as backfill material.

On August 17, 2010, five (5) five-point composite soil samples (Screened SP #3, Screened SP #4, Screened SP #5, Screened SP #6, and Screened SP #7) were collected from the stockpiled material and submitted to the laboratory for analysis. The laboratory analytical results indicated BTEX concentrations ranged from 3.436 mg/kg for soil sample Screened SP #5 to 14.617 mg/kg for soil sample Screened SP #6. TPH concentrations ranged from 3,860 mg/kg for soil sample Screened SP #5 to 7,503 mg/kg for soil sample Screened SP #3. Benzene concentrations were less than the appropriate laboratory MDL for all samples submitted. Soil represented by soil sample Screened SP #3 was re-blended on-site. Soil represented by soil samples Screened SP #4, Screened SP #5, Screened SP #6, and Screened SP #7 was deemed suitable for use as backfill material.

On August 30, 2010, three (3) five-point composite soil samples (Screened SP #8, Screened SP #9, and Screened SP #10) were collected from the stockpiled material and submitted to the laboratory for analysis. The laboratory analytical results indicated BTEX concentrations ranged from 15.642 mg/kg for soil sample Screened SP #8 to 27.55 mg/kg for soil sample Screened SP #10. TPH concentrations ranged from 2,791 mg/kg for soil sample Screened SP #8 to 4,339 mg/kg for soil sample Screened SP #9. Benzene concentrations were less than the appropriate laboratory MDL for all samples submitted. Soil represented by soil samples Screened SP #8, Screened SP #9, and Screened SP #10 was deemed suitable for use as backfill material.



On September 7, 2010, four (4) five-point composite soil samples (Screened SP #3A, Screened SP #11, Screened SP #12, and Screened SP #13) were collected from the stockpiled material and submitted to the laboratory for analysis. The laboratory analytical results indicated BTEX concentrations ranged from 0.5841 mg/kg for soil sample Screened SP #3A to 5.451 mg/kg for soil sample Screened SP #13. TPH concentrations ranged from 2,786 mg/kg for soil sample Screened SP #11 to 4,153 mg/kg for soil sample Screened SP #13. Benzene concentrations were less than the appropriate laboratory MDL for all samples submitted. Soil represented by soil samples Screened SP #3A, Screened SP #11, Screened SP #12, and Screened SP #13 was deemed suitable for use as backfill material.

On September 10, 2010, three (3) five-point composite soil samples (Screened SP #14, Screened SP #15, and Screened SP #16) were collected from the stockpiled material and submitted to the laboratory for analysis. The laboratory analytical results indicated benzene concentrations ranged from less than the appropriate laboratory MDL for soil samples Screened SP #15 and Screened SP #16 to 0.011 mg/kg for soil sample Screened SP #14. BTEX concentrations ranged from 1.0392 mg/kg for soil sample Screened SP #14 to 6.41 mg/kg for soil sample Screened SP #15. TPH concentrations ranged from 1,955 mg/kg for soil sample Screened SP #16 to 3,507 mg/kg for soil sample Screened SP #14. Soil represented by soil samples Screened SP #14, Screened SP #15, and Screened SP #16 was deemed suitable for use as backfill material.

On September 16, 2010, three (3) five-point composite soil samples (Screened SP #17, Screened SP #18, and Screened SP #19) were collected from the stockpiled material and submitted to the laboratory for analysis. The laboratory analytical results indicated BTEX concentrations ranged from 1.6059 mg/kg for soil sample Screened SP #17 to 2.585 mg/kg for soil sample Screened SP #18. TPH concentrations ranged from 3,365 mg/kg for soil sample Screened SP #17 to 4,210 mg/kg for soil sample Screened SP #19. Benzene concentrations were less than the appropriate laboratory MDL for all samples submitted. Soil represented by soil samples Screened SP #17, Screened SP #18, and Screened SP #19 was deemed suitable for use as backfill material.

On September 24, 2010, five (5) five-point composite soil samples (Screened SP #20, Screened SP #21, Screened SP #22, Screened SP #23, and Screened SP #24) were collected from the stockpiled material and submitted to the laboratory for analysis. The laboratory analytical results indicated BTEX concentrations ranged from 1.077 mg/kg for soil sample Screened SP #21 to 1.6917 mg/kg for soil sample Screened SP #24. TPH concentrations ranged from 542 mg/kg for soil sample Screened SP #21 to 3,488 mg/kg for soil sample Screened SP #24. Benzene concentrations were less than the appropriate laboratory MDL for all samples submitted. Soil represented by soil samples Screened SP #20, Screened SP #21, Screened SP #22, Screened SP #23, and Screened SP #24 was deemed suitable for use as backfill material.

On September 30, 2010, four (4) five-point composite soil samples (Screened SP #25, Screened SP #26, Screened SP #27, and Screened SP #28) were collected from the stockpiled material and submitted to the laboratory for analysis. The laboratory analytical results indicated BTEX concentrations ranged from 0.111 mg/kg for soil sample Screened SP #28 to 0.3357 mg/kg for soil sample Screened SP #25. TPH concentrations ranged from 1,204 mg/kg for soil sample Screened SP #28 to 2,007 mg/kg for soil sample Screened SP #27. Benzene concentrations were less than the appropriate laboratory MDL for all samples submitted. Soil represented by soil samples Screened SP #25, Screened SP #26, Screened SP #27, and Screened SP #28 was deemed suitable for use as backfill material.

Based on the analytical results, the excavation was backfilled in eighteen inch lifts, compacted, and contoured to fit the surrounding topography.

### **3.2 Soil Closure Request**

Plains has completed the soil closure activities detailed in the “Remediation Summary and Proposed Soil Closure Strategy”, dated May 2010. Soil samples collected from the floors and sidewalls of the Main and West excavations were analyzed by an NMOCD-approved laboratory, and concentrations of Benzene, BTEX, and TPH were below the remediation action levels set forth in that document. Representative stockpile soil samples were also collected, analyzed by an NMOCD-approved laboratory, and deemed suitable for backfill material, as documented in this report.

It is Basin’s opinion that soil remediation activities are complete and that Plains should request soil closure status for the 14-Inch Vac to Jal Legacy release site.

## **4.0 DISTRIBUTION OF CONTAMINANTS IN THE SATURATED ZONE**

### **4.1 Summary of Groundwater Remediation Activities**

On July 2, 2009, groundwater samples were collected from the temporary casing installed in soil borings SB-2 and SB-3 and submitted to the laboratory for analysis. The analytical results of groundwater collected from SB-2 indicated a benzene concentration of 0.0063 mg/L, a toluene concentration of 0.0158 mg/L, an ethyl-benzene concentration of 0.0054 mg/L, and a total xylene concentration of 0.0107 mg/L. The results further indicated a chloride concentration of 10,200 mg/L and a TDS concentration of 19,700 mg/L.

The analytical results of groundwater collected from SB-3 indicated benzene and BTEX concentrations were less than the appropriate laboratory MDL. The results further indicated a chloride concentration of 10,500 mg/L and a TDS concentration of 20,500 mg/L. Laboratory analytical results indicated benzene and BTEX concentrations were less than NMOCD regulatory standards for SB-2 and SB-3. Laboratory analytical results exceeded NMOCD regulatory standards for concentrations of chlorides and TDS in SB-1 and SB-2. Table 2 summarizes the “Concentrations of Benzene, BTEX, Chlorides & Total Dissolved Solids in Groundwater”.

On December 22, 2009, groundwater samples were collected from the temporary casing installed in soil boring SB-4 and SB-5. Analytical results of groundwater collected from SB-4 indicated a chloride concentration of 8,580 mg/L and a TDS concentration of 15,700 mg/L. The analytical results of groundwater collected from SB-5 indicated a chloride concentration of 9,920 mg/L and a TDS concentration of 18,200 mg/L. Laboratory analytical results indicated concentrations of chlorides and TDS exceeded NMOCD regulatory standards in the two (2) up-gradient soil borings.

The site monitor well (MW-1) was gauged, purged, and sampled on July 6, 2009, October 21, 2009, March 11, 2010, June 4, 2010, September 29, 2010, and November 5, 2010. The monitor well was gauged and purged of a minimum of three (3) well volumes of water or until the well was dry using a PVC bailer or electrical Grundfos Pump. Groundwater was allowed to recharge,

and samples were obtained using disposable Teflon bailers. Water samples were stored in clean, glass containers provided by the laboratory and placed on ice in the field. Purge water was collected in a trailer-mounted polystyrene tank and disposed of at an approved disposal in Monument, New Mexico.

The analytical results of the July 6, 2009, groundwater sampling event indicated all BTEX constituent concentrations were less than the appropriate laboratory MDL. The analytical results indicated a chloride concentration of 5,300 mg/L and a TDS concentration of 14,300 mg/L. Laboratory analytical results indicated benzene and BTEX concentrations were less than NMOCD regulatory standards. Analytical results indicated concentrations of chlorides and TDS exceeded NMOCD regulatory standards.

The analytical results of the October 21, 2009, groundwater sampling event indicated a benzene concentration of 0.0125 mg/L and a toluene concentration of 0.0049 mg/L. Ethyl-benzene and total xylene concentrations were less than the appropriate laboratory MDL. Laboratory analytical results indicated benzene concentrations exceeded NMOCD regulatory standards. Analytical results indicated concentrations of ethyl-benzene, total xylenes, and toluene were less than NMOCD regulatory standards.

The analytical results of the March 11, 2010, groundwater sampling event indicated a benzene concentration of 0.072 mg/L, a toluene concentration of 0.0243 mg/L, an ethyl-benzene concentration of 0.002 mg/L, and a total xylene concentration of 0.0017 mg/L. Laboratory analytical results indicated benzene concentrations exceeded NMOCD regulatory standards. Analytical results indicated concentrations of toluene, ethyl-benzene, and total xylenes were less than NMOCD regulatory standards.

The analytical results of the June 4, 2010, groundwater sampling event indicated a benzene concentration of 0.1407 mg/L, a toluene concentration of 0.0637 mg/L, an ethyl-benzene concentration of 0.0047 mg/L, and a total xylene concentration of 0.0067 mg/L. Laboratory analytical results indicated benzene concentrations exceeded NMOCD regulatory standards. Analytical results indicated concentrations of toluene, ethyl-benzene, and total xylenes were less than NMOCD regulatory standards.

The analytical results of the September 29, 2010, groundwater sampling event indicated a benzene concentration of 0.0514 mg/L, a toluene concentration of 0.0278 mg/L, an ethyl-benzene concentration of 0.0022 mg/L, and a total xylene concentration of 0.0047 mg/L. Laboratory analytical results indicated benzene concentrations exceeded NMOCD regulatory standards. Analytical results indicated concentrations of toluene, ethyl-benzene, and total xylenes were less than NMOCD regulatory standards.

The analytical results of the November 5, 2010, groundwater sampling event indicated a benzene concentration of 0.2795 mg/L, a toluene concentration of 0.1807 mg/L, an ethyl-benzene concentration of 0.0126 mg/L, and a total xylene concentration of 0.0049 mg/L. Laboratory analytical results indicated benzene concentrations exceeded NMOCD regulatory standards. Analytical results indicated concentrations of toluene, ethyl-benzene, and total xylenes were less than NMOCD regulatory standards.

## **4.2 Groundwater Closure Request**

Plains installed one (1) monitor well (MW-1) and four (4) soil borings (SB-2 through SB-5) at the site to evaluate the status of the underlying groundwater. Monitor well MW-1 was located in the southern portion of the excavation. Laboratory analytical data indicated chloride and TDS concentrations exceeded NMOCD regulatory standards.

Soil boring SB-2 was located in the northwest portion of the excavation. Temporary casing was installed in the soil boring, and a groundwater sample was collected. Laboratory analytical results indicated chloride and TDS concentrations exceeded NMOCD regulatory standards.

Soil boring SB-3 was located to the north of the release point adjacent to the Plains pipeline. Temporary casing was installed in the soil boring, and a groundwater sample was collected. Laboratory analytical results indicated chloride and TDS concentrations exceeded NMOCD regulatory standards.

Soil boring SB-4 was located approximately two hundred fifty (250) feet north northwest of the site. Temporary casing was installed in the soil boring, and a groundwater sample was collected. Laboratory analytical results indicated chloride and TDS concentrations exceeded NMOCD regulatory standards.

Soil boring SB-5 was located approximately seven hundred fifteen (715) feet north northwest of the site. Temporary casing was installed in the soil boring, and a groundwater sample was collected. Laboratory analytical results indicated chloride and TDS concentrations exceeded NMOCD regulatory standards.

Given that 1.) elevated chloride and TDS concentrations exist in groundwater samples collected up-gradient from the release point, 2.) elevated chloride concentrations are absent in the soil column at the release point, and 3.) Plains lines transmit strictly crude oil, there is a strong probability that the groundwater contamination may be attributed to either an off-site source or naturally occurring concentrations of these contaminants. Upon further investigation, it was discovered that the 14-Inch Vac to Jal release site is located approximately 1,147 feet to the south-southeast of a documented groundwater remediation site (Arco South Justis Unit F-230). The ARCO Permian Monitor Well Report dated January 2, 2001, showed chloride concentrations exceeding NMOCD regulatory standards and a general groundwater gradient to the southeast.

Laboratory analytical results indicated TDS concentrations in groundwater samples collected from monitor well MW-1 and soil borings SB-2 through SB-5 exceeded 10,000 mg/L. Pursuant to New Mexico Administrative Code (NMAC) Section 20.6.2.4103, the groundwater is non-abatable based on pre-existing conditions, remediation of the groundwater at the 14" Vac to Jal release site is not warranted.

Basin further recommends that Plains request approval to cease groundwater monitoring at the 14" Vac to Jal release site and plug and abandon MW-1. The monitor well will be plugged and abandoned according to NMOSE guidelines by a state-certified water well drilling company. Plains will provide the NMOCD with plugging reports documenting the plugging procedures.

## **5.0 QA/QC PROCEDURES**

### **5.1 Soil Sampling**

Soil Samples were delivered to Xenco Laboratories, Inc., of Odessa, Texas, for BTEX and/or TPH analyses using the methods described below. Soil samples were analyzed for BTEX and/or TPH concentrations within fourteen (14) days following the collection date.

The soil samples were analyzed as follows:

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

### **5.2 Groundwater Sampling**

The groundwater monitor wells were developed utilizing the Environmental Protection Agency (EPA) protocol of nine (9) well volumes of groundwater or until the monitoring wells are dry using an electrical Grundfos Pump. Within forty-eight hours of development and during subsequent quarterly groundwater sampling events, the monitor wells were measured and purged of approximately three (3) well volumes utilizing an electrical Grundfos Pump. Groundwater samples were collected using a disposable Teflon sampler, stored in clean, glass containers provided by the laboratory, and placed on ice in the field. Purge water was collected in a polystyrene tank and disposed of at a NMOCD-approved disposal facility.

Groundwater samples were delivered to Xenco Laboratories, Inc., of Odessa, Texas, for analysis of BTEX, Chloride, and/or TDS concentrations using the methods described below. All samples were analyzed within approved holding times following the collection date.

- BTEX concentrations in accordance with EPA Method 8021B, 5030
- Chloride concentrations in accordance with EPA Method 300
- TDS in accordance with Method SM2540C

### **5.3 Decontamination of Equipment**

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

### **5.4 Laboratory Protocol**

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

## **6.0 SITE CLOSURE REQUEST**

Basin recommends that Plains request site closure status for the 14-Inch Vac to Jal Legacy release site. The activities conducted at the site met the objectives set forth in the "Remediation Summary and Proposed Soil Closure Strategy". It is recommended that Plains not conduct any further remediation activities at the site.

## **7.0 LIMITATIONS**

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

Basin Environmental Service Technologies, LLC, has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Basin Environmental Service Technologies, 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 Service Technologies, LLC, has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin Environmental Service Technologies, 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.

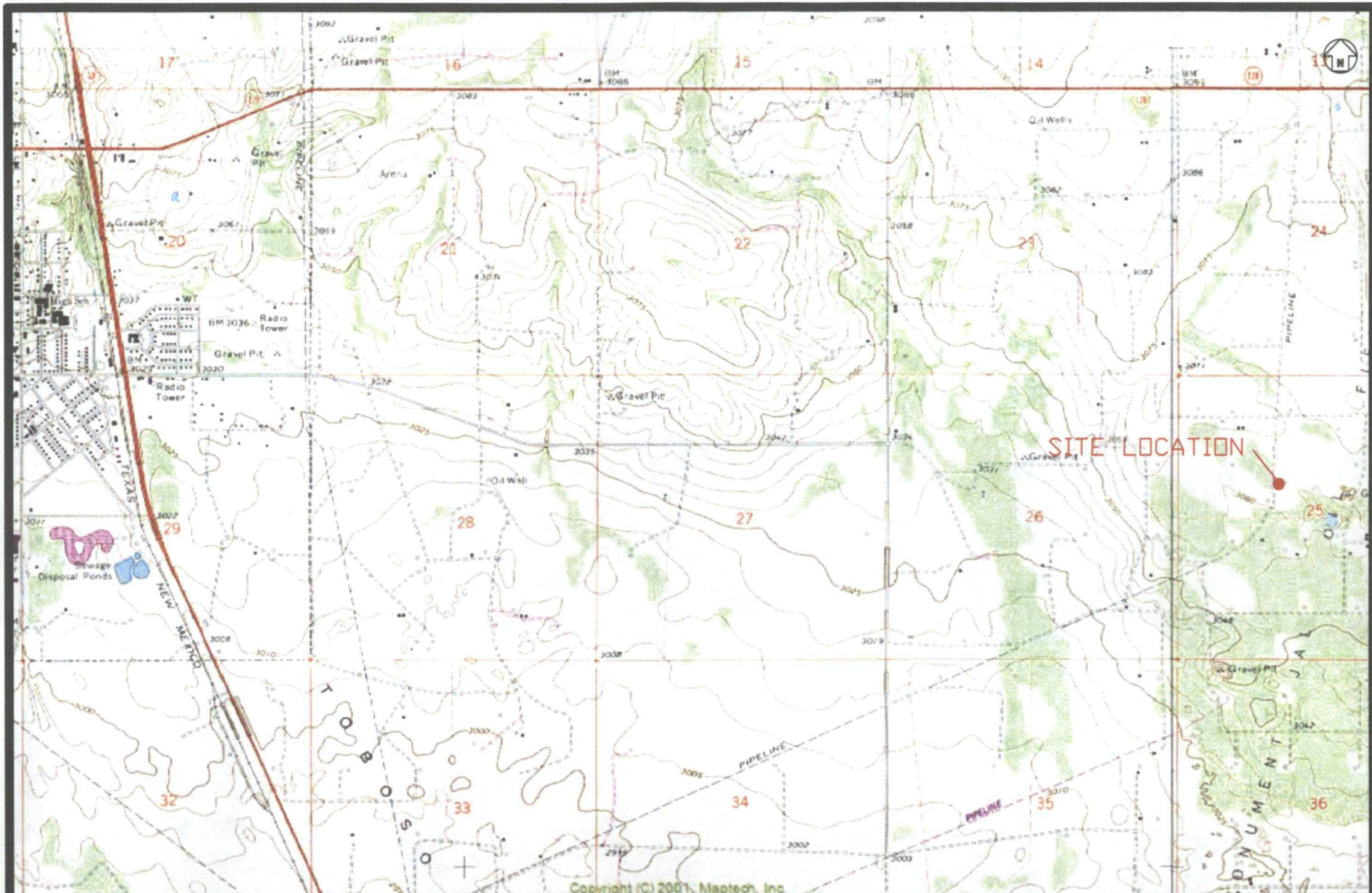
This report has been prepared for the benefit of Plains Pipeline, LP. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Service Technologies, LLC, and/or Plains Pipeline, LP.

## **8.0 DISTRIBUTION:**

- Copy 1: Ed Hansen  
New Mexico Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505  
edwardj.hansen@state.nm.us
- Copy 2: Larry Johnson  
New Mexico Energy, Minerals and Natural Resources Department  
Oil Conservation Division (District 1)  
1625 French Drive  
Hobbs, New Mexico 88240  
larry.johnson@state.nm.us
- Copy 3: Patrick Ellis  
Manager HSE  
COG Operating, LLC  
550 W. Texas Avenue, Suite 100  
Midland, Texas 79701
- Copy 4: Jeff Dann  
Plains Pipeline, LP  
333 Clay Street, Suite 1600  
Houston, Texas 77002  
jpdann@paalp.com
- Copy 5: Jason Henry  
Plains Pipeline, LP  
2530 State Highway 214  
Denver City, Texas 79323  
jhenry@paalp.com
- Copy 6: Basin Environmental Service Technologies, LLC  
P.O. Box 301  
Lovington, New Mexico 88260  
bjarguijo@basinenv.com

# Figures





2500 1250 0 1250 2500  
 Distance in Feet

Figure 1  
 Site Location Map  
 Plains Pipeline, L.P.  
 14-Inch Vac to Jal - Legacy  
 Lea County, New Mexico  
 SRS# 2009-092  
 NMOC Ref 1RP-2162

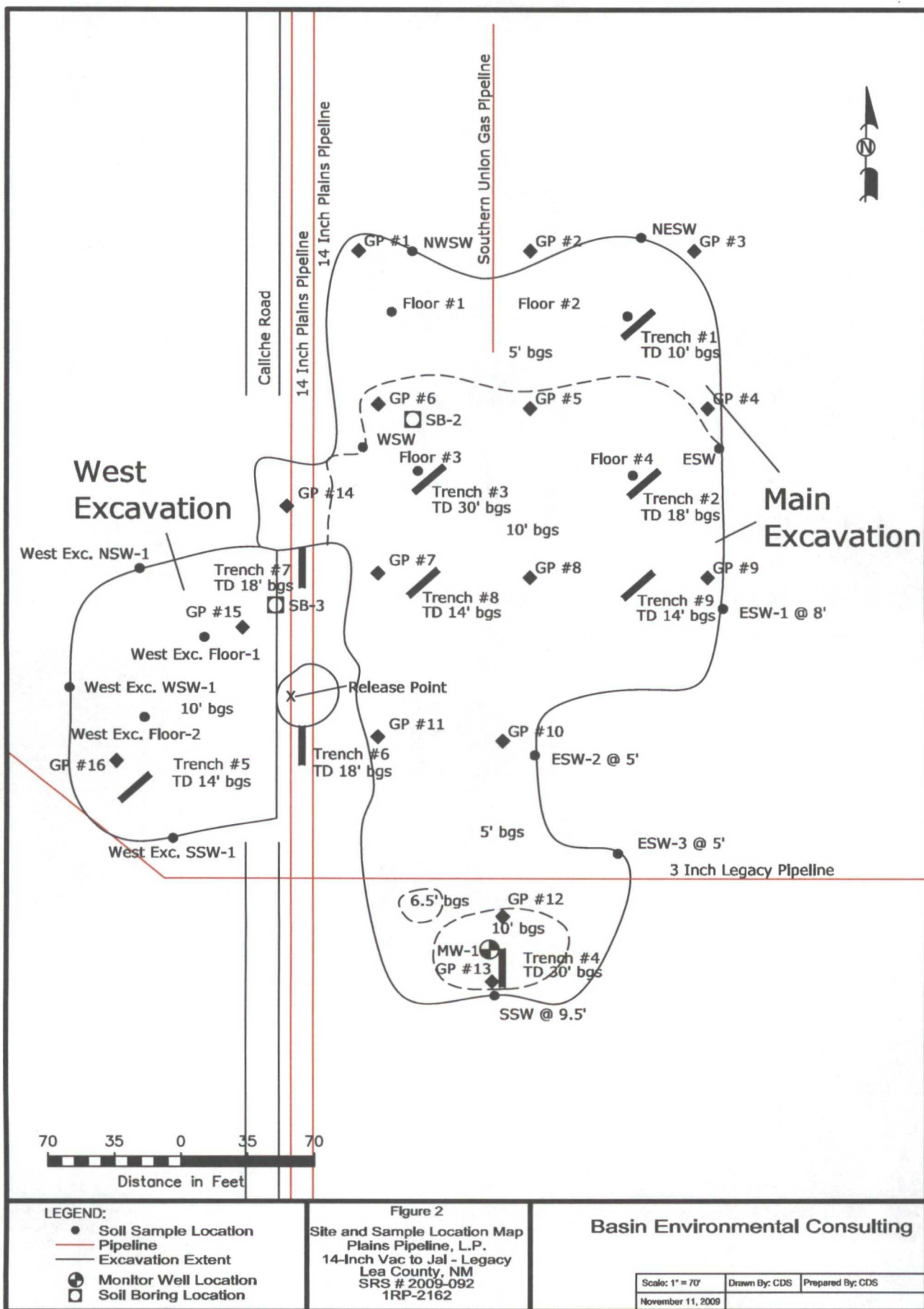
Basin Environmental Consulting

Prep By: CDS

Checked By: CDS

May 12, 2010

Scale 1"=2,500'



# Tables

TABLE 1

## CONCENTRATIONS OF BENZENE, BTEX, TPH &amp; CHLORIDES IN SOIL

PLAINS PIPELINE, L.P.  
14" VAC TO JAL - LEGACY  
LEA COUNTY, NEW MEXICO  
SRS: 2009-092  
NMOCD REFERENCE NO: 1RP-2162

| SAMPLE LOCATION          | SAMPLE DEPTH (BGS) | SAMPLE DATE | DATE ANALYZED | SOIL STATUS | METHOD: EPA SW 846-8021B, 5030 |                 |                       |                        |                  | METHOD: 8015M      |   |  | TOTAL TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg) | E 300 CHLORIDE (mg/Kg) |
|--------------------------|--------------------|-------------|---------------|-------------|--------------------------------|-----------------|-----------------------|------------------------|------------------|--------------------|---|--|---|------------------------|
|                          |                    |             |               |             | BENZENE (mg/Kg)                | TOLUENE (mg/Kg) | ETHYL-BENZENE (mg/Kg) | M.P. - XYLENES (mg/Kg) | O-XYLENE (mg/Kg) | TOTAL BTEX (mg/Kg) | GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg) | DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg) | ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg)      |                        |
| Chloride Baseline        | N/A                | 4/15/2009   | 4/17/2009     | N/A         | -                              | -               | -                     | -                      | -                | -                  | -   | -  | -   | 796                    |
| Stockpile #1             | N/A                | 5/18/2009   | 5/27/2009     | N/A         | 3.549                          | 88.56           | 63.06                 | 88.09                  | 32.31            | 275.569            | 3,990                                       | 4,890  | <333  | 8,880                  |
| Stockpile #2             | N/A                | 5/18/2009   | 5/27/2009     | N/A         | 23.2                           | 233             | 111                   | 165.8                  | 12.4             | 545.4              | 8,260                                       | 9,340  | 669   | 18,269                 |
| Main Exc. NWSW           | 4.5 Feet           | 5/18/2009   | 5/27/2009     | In-Situ     | 0.0073                         | 0.0354          | 0.0158                | 0.0249                 | 0.009            | 0.0924             | 18  | 18.1   | <15.4   | 36.1                   |
| Main Exc. NESW           | 4.5 Feet           | 5/18/2009   | 5/27/2009     | In-Situ     | 0.0013                         | <0.0022         | <0.0011               | <0.0022                | <0.0011          | 0.0013             | <16.4                                       | 43.3   | <16.4   | 43.3                   |
| Main Exc. WSW            | 9 Feet             | 5/18/2009   | 5/27/2009     | In-Situ     | <0.0011                        | <0.0022         | <0.0011               | <0.0022                | <0.0011          | <0.0022            | <16.2                                       | <16.2  | <16.2   | <16.2                  |
| Main Exc. ESW            | 8 Feet             | 5/18/2009   | 5/27/2009     | In-Situ     | <0.0010                        | <0.0020         | <0.0010               | <0.0020                | <0.0010          | <0.0020            | <15.4                                       | 21.3   | <15.4   | 21.3                   |
| Main Exc. Floor #1       | 5 Feet             | 5/18/2009   | 5/27/2009     | In-Situ     | 0.0013                         | 0.0033          | <0.0010               | <0.0021                | <0.0010          | 0.0046             | <15.4                                       | 19.8   | <15.4   | 19.8                   |
| Main Exc. Floor #2       | 5 Feet             | 5/18/2009   | 5/27/2009     | In-Situ     | <2.397                         | 26.82           | 41.51                 | 71.76                  | 27.42            | 167.51             | 4,460                                       | 7,640  | <359  | 12,100                 |
| Main Exc. Floor #3       | 10 Feet            | 5/18/2009   | 5/27/2009     | In-Situ     | 0.0022                         | 0.0071          | 0.0013                | <0.0020                | <0.0010          | 0.0106             | 50.9  | 1,460  | 95.4  | 1,606.3                |
| Main Exc. Floor #4       | 10 Feet            | 5/18/2009   | 5/27/2009     | In-Situ     | 9.459                          | 106.7           | 84.72                 | 123                    | 47.24            | 371.119            | 4,970                                       | 7,740  | 523   | 13,233                 |
| T-1 @ 10' bgs            | 10 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | <0.0011                        | <0.0022         | <0.0011               | <0.0022                | <0.0011          | <0.0022            | <16.4                                       | <16.4  | <16.4   | <16.4                  |
| T-2 @ 12' bgs            | 12 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 34.76                          | 323.9           | 189.7                 | 285                    | 96.74            | 930.1              | 10,300                                      | 16,500                                       | 1,440   | 28,240                 |
| T-2 @ 14' bgs            | 14 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 18.84                          | 223.7           | 136.1                 | 206                    | 70.99            | 655.63             | 7,000                                       | 10,500                                       | 1,050   | 18,550                 |
| T-2 @ 18' bgs            | 18 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 0.0023                         | 0.0088          | 0.0069                | 0.0121                 | 0.0052           | 0.0353             | 22.3  | 109  | <17.3   | 131.3                  |
| T-3 @ 12' bgs            | 12 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 4.046                          | 55.43           | 43.23                 | 66.87                  | 23.7             | 193.276            | 3,550                                       | 6,450  | 725   | 10,725                 |
| T-3 @ 14' bgs            | 14 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 4.059                          | 74.4            | 58.59                 | 87.36                  | 31.03            | 255.439            | 3,980                                       | 7,300  | 785   | 12,065                 |
| T-3 @ 18' bgs            | 18 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 11.28                          | 83.91           | 48.65                 | 73.01                  | 24.87            | 241.72             | 5,930                                       | 11,100                                       | 1,080   | 18,110                 |
| T-3 @ 22' bgs            | 22 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 0.007                          | 0.025           | 0.0085                | 0.011                  | 0.0053           | 0.0568             | <18.5                                       | 59   | <18.5   | 59                     |
| T-3 @ 26' bgs            | 26 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | <0.1194                        | 0.6279          | 1.565                 | 4.657                  | 2.401            | 9.2509             | 289   | 910  | 81.9  | 1,280.9                |
| T-3 @ 30' bgs            | 30 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | <1.073                         | 2.587           | 3.671                 | 6.086                  | 2.512            | 14.856             | 420   | 1,400  | 118   | 1,938                  |
| T-4 @ 12' bgs            | 12 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 48.18                          | 400.1           | 211.1                 | 327.2                  | 111              | 1097.58            | 13,200                                      | 22,300                                       | 2,050   | 37,550                 |
| T-4 @ 14' bgs            | 14 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 8.783                          | 102             | 63.4                  | 96                     | 33.74            | 303.923            | 3,100                                       | 4,600  | 524   | 8,224                  |
| T-4 @ 18' bgs            | 18 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 29.02                          | 277.2           | 142.5                 | 215.4                  | 73.52            | 737.64             | 9,680                                       | 14,200                                       | 1,340   | 25,220                 |
| T-4 @ 22' bgs            | 22 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 20.63                          | 163.3           | 80.59                 | 111.1                  | 39.38            | 415                | 8,240                                       | 13,700                                       | 1,130   | 23,070                 |
| T-4 @ 26' bgs            | 26 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 31.62                          | 213.1           | 111                   | 158.5                  | 55.5             | 569.72             | 5,040                                       | 7,900  | 853   | 13,793                 |
| T-4 @ 30' bgs            | 30 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 23.12                          | 250.2           | 143                   | 214.8                  | 74.02            | 705.14             | 7,750                                       | 11,000                                       | 1,290   | 20,040                 |
| T-5 @ 14' bgs            | 14 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 0.0078                         | 0.0041          | <0.0012               | <0.0025                | <0.0012          | 0.0119             | <18.6                                       | 32   | <18.6   | 32                     |
| T-6 @ 10' bgs            | 10 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 1.999                          | 20.67           | 21.2                  | 32.8                   | 12.43            | 89.099             | 1,080                                       | 2,620  | 296   | 3,996                  |
| T-6 @ 14' bgs            | 14 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 0.0013                         | 0.0053          | 0.0015                | <0.0025                | <0.0013          | 0.0081             | <18.9                                       | 28.3   | <18.9   | 28.3                   |
| T-6 @ 18' bgs            | 18 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | <0.0012                        | 0.0042          | 0.0018                | <0.0024                | <0.0012          | 0.006              | <18.3                                       | 66.6   | <18.3   | 66.6                   |
| T-7 @ 10' bgs            | 10 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 9.257                          | 56.21           | 35.25                 | 54.67                  | 19.97            | 175.357            | 3,460                                       | 5,480  | 900   | 9,840                  |
| T-7 @ 14' bgs            | 14 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 5.998                          | 62.42           | 46.94                 | 71.87                  | 25.59            | 212.818            | 3,170                                       | 5,270  | 799   | 9,239                  |
| T-7 @ 18' bgs            | 18 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | <1.2                           | 33.32           | 37.7                  | 59.77                  | 22.55            | 153.34             | 3,190                                       | 5,010  | 861   | 9,061                  |
| T-8 @ 10' bgs            | 10 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | <0.0011                        | <0.0023         | <0.0011               | <0.0023                | <0.0011          | <0.0023            | <17.0                                       | 47.4   | 44.3  | 91.7                   |
| T-8 @ 14' bgs            | 14 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | <0.0012                        | <0.0023         | <0.0012               | <0.0023                | <0.0012          | <0.0023            | <17.4                                       | <17.4  | <17.4   | <17.4                  |
| T-9 @ 10' bgs            | 10 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 0.0072                         | 0.3247          | 0.2975                | 0.4625                 | 0.247            | 1.3389             | 383   | 3,720  | 648   | 4,751                  |
| T-9 @ 14' bgs            | 14 Feet            | 5/26/2009   | 5/31/2009     | In-Situ     | 0.0062                         | <0.0023         | 0.0018                | 0.0097                 | 0.0072           | 0.0249             | <17.6                                       | 69.7   | 36.3  | 106                    |
| Main Exc. ESW-1 @ 8' bgs | 8 Feet             | 5/28/2009   | 6/1/2009      | In-Situ     | <0.0011                        | <0.0022         | <0.0011               | <0.0022                | <0.0011          | <0.0022            | <16.8                                       | 38.8   | <16.8   | 38.8                   |
| Main Exc. ESW-2 @ 5' bgs | 5 Feet             | 5/28/2009   | 6/1/2009      | In-Situ     | <0.0011                        | <0.0021         | <0.0011               | <0.0021                | <0.0011          | <0.0021            | <16.0                                       | <16.0  | <16.0   | <16.0                  |



TABLE 1

## CONCENTRATIONS OF BENZENE, BTEX, TPH &amp; CHLORIDES IN SOIL

PLAINS PIPELINE, L.P.  
14" VAC TO JAL - LEGACY  
LEA COUNTY, NEW MEXICO  
SRS: 2009-092  
NMOCD REFERENCE NO: 1RP-2162

| SAMPLE LOCATION          | SAMPLE DEPTH (BGS) | SAMPLE DATE | DATE ANALYZED | SOIL STATUS | METHOD: EPA SW 846-8021B, 5030 |                 |                       |                        |                  |                    | METHOD: 8015M                               |  |  | TOTAL TPH C <sub>9</sub> -C <sub>35</sub> (mg/Kg) | E 300 CHLORIDE (mg/Kg) |
|--------------------------|--------------------|-------------|---------------|-------------|--------------------------------|-----------------|-----------------------|------------------------|------------------|--------------------|---|--|--|---|------------------------|
|                          |                    |             |               |             | BENZENE (mg/Kg)                | TOLUENE (mg/Kg) | ETHYL-BENZENE (mg/Kg) | M.P. - XYLENES (mg/Kg) | O-XYLENE (mg/Kg) | TOTAL BTEX (mg/Kg) | GRO C <sub>9</sub> -C <sub>12</sub> (mg/Kg) | DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg) | ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg) |   |                        |
| Main Exc. ESW-3 @ 3' bgs | 3 Feet             | 5/28/2009   | 6/1/2009      | In-Situ     | <0.0010                        | <0.0021         | <0.0010               | <0.0021                | <0.0010          | <0.0021            | <15.5                                       | 59.9   | 26.3   | 86.2  | -                      |
| Main Exc. SSW @ 9.5' bgs | 9.5 Feet           | 5/28/2009   | 6/1/2009      | In-Situ     | <0.0011                        | <0.0022         | <0.0011               | <0.0022                | <0.0011          | <0.0022            | <16.6                                       | <16.6  | <16.6  | <16.6   | -                      |
| SB-1 / MW-1 @ 5'         | 15 Feet            | 7/1/2009    | 7/10/2009     | In-Situ     | 1.447                          | 13.56           | 10.15                 | 14.23                  | 6.562            | 45.949             | 731   | 2,310  | <183   | 3,041   | 53.4                   |
| SB-1 / MW-1 @ 15'        | 25 Feet            | 7/1/2009    | 7/10/2009     | In-Situ     | 1.197                          | 12.27           | 8.475                 | 12.21                  | 5.658            | 39.81              | 551   | 1,980  | 126  | 2,657   | 23                     |
| SB-1 / MW-1 @ 25'        | 35 Feet            | 7/1/2009    | 7/10/2009     | In-Situ     | 0.5279                         | 18.58           | 18.72                 | 29.75                  | 11.92            | 79.4979            | 1,950                                       | 7,270  | 435  | 9,655   | 10.3                   |
| SB-1 / MW-1 @ 35'        | 45 Feet            | 7/1/2009    | 7/10/2009     | In-Situ     | 0.556                          | 10.74           | 17.45                 | 30.49                  | 11.55            | 70.7856            | 66.8  | 827  | 51.6   | 945.4   | 12.5                   |
| SB-1 / MW-1 @ 45'        | 55 Feet            | 7/1/2009    | 7/10/2009     | In-Situ     | <0.0010                        | 0.0127          | 0.0642                | 0.1268                 | 0.0578           | 0.2615             | 98  | 1,060  | 70.7   | 1,229.1   | 22.1                   |
| SB-1 / MW-1 @ 50'        | 60 Feet            | 7/1/2009    | 7/10/2009     | In-Situ     | <0.0010                        | <0.0021         | <0.0010               | 0.0025                 | <0.0010          | 0.0025             | 336   | 2,910  | 195  | 3,441   | 19.6                   |
| SB-1 / MW-1 @ 55'        | 65 Feet            | 7/1/2009    | 7/10/2009     | In-Situ     | <0.0011                        | <0.0021         | 0.0068                | 0.0094                 | 0.0083           | 0.0245             | 25.8  | 392  | 27.6   | 445   | 179                    |
| SB-2 @ 5'                | 15 Feet            | 7/1/2009    | 7/14/2009     | In-Situ     | <0.0279                        | 2.41            | 7.296                 | 11.59                  | 5.095            | 26.391             | 904   | 3,610  | 141  | 4,655   | 47.7                   |
| SB-2 @ 15'               | 25 Feet            | 7/1/2009    | 7/13/2009     | In-Situ     | 0.2671                         | 4.984           | 2.384                 | 9.315                  | 3.829            | 20.7791            | 555   | 2,210  | 107  | 2,872   | 34                     |
| SB-2 @ 25'               | 35 Feet            | 7/1/2009    | 7/12/2009     | In-Situ     | <0.0011                        | <0.0023         | 0.0019                | 0.0058                 | 0.0032           | 0.0109             | 21.1  | 196  | <16.9  | 217.1   | 32.3                   |
| SB-2 @ 35'               | 45 Feet            | 7/1/2009    | 7/10/2009     | In-Situ     | <0.0010                        | <0.0021         | 0.0032                | 0.0078                 | 0.0035           | 0.0145             | <15.4                                       | 57.8   | <15.4  | 57.8  | <5.15                  |
| SB-2 @ 45'               | 55 Feet            | 7/1/2009    | 7/13/2009     | In-Situ     | <0.0011                        | <0.0021         | <0.0011               | <0.0021                | <0.0011          | <0.0021            | 27.2  | 261  | 20.2   | 308.4   | 51.2                   |
| SB-2 @ 50'               | 60 Feet            | 7/1/2009    | 7/12/2009     | In-Situ     | <0.0011                        | <0.0021         | <0.0011               | <0.0021                | <0.0011          | <0.0021            | 19.6  | 105  | <16.0  | 124.6   | 471                    |
| SB-2 @ 55'               | 65 Feet            | 7/1/2009    | 7/12/2009     | In-Situ     | <0.0011                        | <0.0022         | <0.0011               | <0.0022                | <0.0011          | <0.0022            | 16.8  | 86.8   | <16.8  | 103.6   | 952                    |
| SB-3 @ 5'                | 5 Feet             | 7/2/2009    | 7/13/2009     | In-Situ     | 0.0644                         | 1.411           | 1.604                 | 2.708                  | 0.9809           | 6.7683             | 1,550                                       | 4,450  | 226  | 6,226   | 152                    |
| SB-3 @ 15'               | 15 Feet            | 7/2/2009    | 7/14/2009     | In-Situ     | <0.0272                        | 0.6387          | 2.621                 | 4.548                  | 1.919            | 9.7267             | 477   | 2,660  | 155  | 3,292   | 73                     |
| SB-3 @ 25'               | 25 Feet            | 7/2/2009    | 7/14/2009     | In-Situ     | <0.5530                        | 2.969           | 4.529                 | 7.355                  | 2.875            | 17.728             | 887   | 4,560  | 268  | 5,715   | 54.4                   |
| SB-3 @ 35'               | 35 Feet            | 7/2/2009    | 7/10/2009     | In-Situ     | <0.0010                        | <0.0021         | <0.0010               | <0.0021                | <0.0010          | <0.0010            | <15.6                                       | 103  | <15.6  | 103   | 24.8                   |
| SB-3 @ 45'               | 45 Feet            | 7/2/2009    | 7/10/2009     | In-Situ     | <0.0010                        | <0.0021         | 0.0023                | 0.0054                 | 0.0028           | 0.0105             | 17.3  | 113  | 18   | 148.3   | 17.2                   |
| SB-3 @ 50'               | 50 Feet            | 7/2/2009    | 7/10/2009     | In-Situ     | <0.0010                        | <0.0020         | 0.0015                | 0.0035                 | 0.0018           | 0.0068             | <15.3                                       | 72.2   | <15.3  | 72.2  | 8.94                   |
| SB-3 @ 55'               | 55 Feet            | 7/2/2009    | 7/10/2009     | In-Situ     | <0.0010                        | 0.0035          | 0.0142                | 0.0305                 | 0.0137           | 0.0619             | 23.3  | 159  | 18.2   | 200.5   | 24.1                   |
| SB-3 @ 60'               | 60 Feet            | 7/2/2009    | 7/10/2009     | In-Situ     | <0.0010                        | <0.0021         | 0.0038                | 0.0087                 | 0.0041           | 0.0166             | 23.7  | 126  | 18.5   | 168.2   | 46.1                   |
| Treatment Cell #1        | Backfill           | 9/24/2009   | 9/30/2009     | In-Situ     | 1.539                          | 31.4            | 30.15                 | 51.23                  | 21.99            | 136.31             | 2,560.0                                     | 8,530  | 220.0  | 11,310.0  | -                      |
| West Exc. NSW-1          | 8 Feet             | 9/30/2009   | 10/3/2009     | In-Situ     | <0.0011                        | <0.0022         | <0.0011               | <0.0022                | <0.0011          | <0.0022            | <16.7                                       | <16.7  | <16.7  | <16.7   | -                      |
| West Exc. WSW-1          | 8 Feet             | 9/30/2009   | 10/3/2009     | In-Situ     | <0.0012                        | <0.0024         | <0.0012               | <0.0024                | <0.0012          | <0.0022            | <18.3                                       | <18.3  | <18.3  | <18.3   | -                      |
| West Exc. SSW-1          | 8 Feet             | 9/30/2009   | 10/3/2009     | In-Situ     | <0.0011                        | <0.0023         | <0.0011               | <0.0023                | <0.0011          | <0.0023            | <17.2                                       | 20.7   | <17.2  | 20.7  | -                      |
| West Exc. Floor-1        | 10 Feet            | 9/30/2009   | 10/3/2009     | In-Situ     | <0.0012                        | <0.0023         | <0.0012               | <0.0023                | <0.0012          | <0.0023            | <17.6                                       | <17.6  | <17.6  | <17.6   | -                      |
| West Exc. Floor-2        | 10 Feet            | 9/30/2009   | 10/3/2009     | In-Situ     | <0.0012                        | <0.0024         | <0.0012               | <0.0024                | <0.0012          | <0.0024            | <18.0                                       | <18.0  | <18.0  | <18.0   | -                      |
| GP #1 @ 6'               | 6 Feet             | 11/10/2009  | 11/10/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | <16.1                                       | 31.4   | <16.1  | 31.4  | 119                    |
| GP #2 @ Grade            | Surface            | 11/10/2009  | 11/10/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | 31.1  | 522  | 134  | 687.1   | 11.6                   |
| GP #3 @ Grade            | Surface            | 11/10/2009  | 11/10/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | <15.5                                       | 263  | 74.8   | 337.8   | 3,510                  |
| GP #4 @ 5'               | 5 Feet             | 11/10/2009  | 11/10/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | <16.3                                       | 19.7   | <16.3  | 19.7  | 772                    |
| GP #5 @ 7'               | 7 Feet             | 11/10/2009  | 11/10/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | <15.7                                       | 62.1   | <15.7  | 62.1  | 142                    |
| GP #6 @ 9'               | 9 Feet             | 11/10/2009  | 11/10/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | 216   | 4,190  | 290  | 4,696   | <5.22                  |
| GP #7 @ 9'               | 9 Feet             | 11/10/2009  | 11/10/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | <16.2                                       | 40.6   | <16.2  | 40.6  | 71.5                   |

TABLE 1

## CONCENTRATIONS OF BENZENE, BTEX, TPH &amp; CHLORIDES IN SOIL

PLAINS PIPELINE, L.P.  
14" VAC TO JAL - LEGACY  
LEA COUNTY, NEW MEXICO

SRS: 2009-092

NMOCD REFERENCE NO: 1RP-2162

| SAMPLE LOCATION  | SAMPLE DEPTH (BGS) | SAMPLE DATE | DATE ANALYZED | SOIL STATUS | METHOD: EPA SW 846-8021B, 5030 |                 |                       |                        |                  |                    | METHOD: 8015M                               |  |  | TOTAL                                   | E 300            |
|------------------|--------------------|-------------|---------------|-------------|--------------------------------|-----------------|-----------------------|------------------------|------------------|--------------------|---|--|--|---|------------------|
|                  |                    |             |               |             | BENZENE (mg/Kg)                | TOLUENE (mg/Kg) | ETHYL-BENZENE (mg/Kg) | M.P. - XYLENES (mg/Kg) | O-XYLENE (mg/Kg) | TOTAL BTEX (mg/Kg) | GRO C <sub>8</sub> -C <sub>12</sub> (mg/Kg) | DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg) | ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg) | C <sub>8</sub> -C <sub>35</sub> (mg/Kg) | CHLORIDE (mg/Kg) |
| GP #8 @ 9'       | 9 Feet             | 11/10/2009  | 11/10/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | <16.5                                       | <16.5  | <16.5  | <16.5                                   | 378              |
| GP #9 @ 10'      | 10 Feet            | 11/10/2009  | 11/10/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | 36.4  | 286  | 16.2   | 338.6                                   | 6.72             |
| GP #10 @ 7'      | 7 Feet             | 11/10/2009  | 11/10/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | <15.9                                       | 23.2   | <15.9  | 23.2                                    | 16.6             |
| GP #11 @ 7'      | 7 Feet             | 11/10/2009  | 11/10/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | <15.4                                       | 170  | 18.6   | 188.6                                   | 21.3             |
| GP #12 @ 10'     | 10 Feet            | 11/10/2009  | 11/10/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | 688   | 3,670  | 227  | 4,585                                   | <5.17            |
| GP #13 @ 10'     | 10 Feet            | 11/10/2009  | 11/10/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | <17.1                                       | 51.9   | <17.1  | 51.9                                    | 219              |
| GP #14 @ 12'     | 12 Feet            | 11/10/2009  | 11/10/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | 212   | 2,920  | 199  | 3,331                                   | 9.32             |
| GP #15 @ 10'     | 10 Feet            | 11/10/2009  | 11/10/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | <16.2                                       | 69.7   | <16.2  | 69.7                                    | 62.9             |
| GP #16 @ 10'     | 10 Feet            | 11/10/2009  | 11/10/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | <18.8                                       | <18.8  | <18.8  | <18.8                                   | 9.57             |
| SB #4 @ 10'      | 10 Feet            | 12/10/2009  | 12/15/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | -   | -  | -  | -                                       | 85.3             |
| SB #4 @ 20'      | 20 Feet            | 12/10/2009  | 12/15/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | -   | -  | -  | -                                       | 26.8             |
| SB #4 @ 30'      | 30 Feet            | 12/10/2009  | 12/15/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | -   | -  | -  | -                                       | 61.8             |
| SB #4 @ 40'      | 40 Feet            | 12/10/2009  | 12/15/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | -   | -  | -  | -                                       | 26.5             |
| SB #4 @ 50'      | 50 Feet            | 12/10/2009  | 12/15/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | -   | -  | -  | -                                       | <5.02            |
| SB #5 @ 10'      | 10 Feet            | 12/10/2009  | 12/15/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | -   | -  | -  | -                                       | 117              |
| SB #5 @ 20'      | 20 Feet            | 12/10/2009  | 12/15/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | -   | -  | -  | -                                       | 263              |
| SB #5 @ 30'      | 30 Feet            | 12/10/2009  | 12/15/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | -   | -  | -  | -                                       | 55.5             |
| SB #5 @ 40'      | 40 Feet            | 12/10/2009  | 12/15/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | -   | -  | -  | -                                       | 6.71             |
| SB #5 @ 45'      | 45 Feet            | 12/10/2009  | 12/15/2009    | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | -   | -  | -  | -                                       | 183              |
| Screened SP # 1  | N/A                | 8/4/2010    | 8/16/2010     | In-Situ     | 0.0173                         | 0.1184          | 0.3405                | 1.206                  | 0.7582           | 2.4404             | 1260  | 3550   | 201  | 5,011                                   |                  |
| Screened SP # 2  | N/A                | 8/4/2010    | 8/16/2010     | In-Situ     | 0.0297                         | 0.158           | 0.3963                | 1.354                  | 1.784            | 3.722              | 1320  | 3400   | 148  | 4,868                                   |                  |
| Screened SP #3   | N/A                | 8/17/2010   | 8/27/2010     | In-Situ     | -                              | -               | -                     | -                      | -                | -                  | 643   | 5810   | 1050   | 7,503                                   |                  |
| Screened SP #4   | N/A                | 8/17/2010   | 8/27/2010     | In-Situ     | <0.1077                        | <0.2155         | 0.46                  | 1.673                  | 1.405            | 3.538              | 1120  | 2840   | 160  | 4,120                                   |                  |
| Screened SP #5   | N/A                | 8/17/2010   | 8/27/2010     | In-Situ     | <0.0217                        | 0.0814          | 0.3981                | 1.443                  | 1.513            | 3.436              | 1190  | 2480   | 190  | 3,860                                   |                  |
| Screened SP #6   | N/A                | 8/17/2010   | 8/27/2010     | In-Situ     | <0.108                         | 0.2311          | 0.9537                | 6.488                  | 6.944            | 14.617             | 1490  | 2510   | 195  | 4,195                                   |                  |
| Screened SP #7   | N/A                | 8/17/2010   | 8/27/2010     | In-Situ     | <0.1094                        | <0.2187         | 0.6792                | 4.426                  | 4.88             | 9.985              | 1290  | 2510   | 145  | 3,945                                   |                  |
| Screened SP #8   | N/A                | 8/30/2010   | 9/9/2010      | In-Situ     | <0.1105                        | 0.2828          | 1.507                 | 6.676                  | 7.176            | 15.642             | 981   | 1730   | 80.4   | 2,791                                   |                  |
| Screened SP #9   | N/A                | 8/30/2010   | 9/9/2010      | In-Situ     | <0.1130                        | 0.4158          | 1.037                 | 11.78                  | 8.956            | 22.19              | 1690  | 2520   | 129  | 4,339                                   |                  |
| Screened SP #10  | N/A                | 8/30/2010   | 9/9/2010      | In-Situ     | <0.1104                        | 0.5621          | 1.339                 | 15.25                  | 10.4             | 27.55              | 1420  | 2210   | 73.7   | 3,704                                   |                  |
| Screened SP #3A  | N/A                | 9/7/2010    | 9/15/2010     | In-Situ     | <0.0213                        | 0.0552          | 0.1002                | 0.2966                 | 0.1321           | 0.5841             | 680   | 2470   | 199  | 3,349                                   |                  |
| Screened SP #11  | N/A                | 9/7/2010    | 9/15/2010     | In-Situ     | <0.0535                        | 0.2656          | 0.3266                | 0.4519                 | 0.2816           | 1.3257             | 592   | 2060   | 134  | 2,786                                   |                  |
| Screened SP # 12 | N/A                | 9/7/2010    | 9/15/2010     | In-Situ     | <0.0528                        | <0.1056         | 0.3476                | 1.258                  | 1.855            | 3.461              | 764   | 2750   | 140  | 3,654                                   |                  |
| Screened SP #13  | N/A                | 9/7/2010    | 9/15/2010     | In-Situ     | <0.0541                        | 0.2092          | 0.127                 | 3.177                  | 1.938            | 5.451              | 1270  | 2710   | 173  | 4,153                                   |                  |
| Screened SP # 14 | N/A                | 9/10/2010   | 9/16/2010     | In-Situ     | 0.0011                         | 0.0314          | 0.0149                | 0.5307                 | 0.4611           | 1.0392             | 901   | 2540   | 66.4   | 3,507                                   |                  |
| Screened SP # 15 | N/A                | 9/10/2010   | 9/16/2010     | In-Situ     | <0.0265                        | 0.14            | 0.7463                | 2.849                  | 2.675            | 6.41               | 645   | 1930   | 81.6   | 2,657                                   |                  |
| Screened SP #16  | N/A                | 9/10/2010   | 9/16/2010     | In-Situ     | <0.0265                        | 0.0672          | 0.4311                | 1.377                  | 1.203            | 3.078              | 408   | 1510   | 36.8   | 1,955                                   |                  |

TABLE 1

## CONCENTRATIONS OF BENZENE, BTEX, TPH &amp; CHLORIDES IN SOIL

PLAINS PIPELINE, L.P.  
 14" VAC TO JAL - LEGACY  
 LEA COUNTY, NEW MEXICO  
 SRS: 2009-092  
 NMOCD REFERENCE NO: 1RP-2162

| SAMPLE LOCATION  | SAMPLE DEPTH (BGS) | SAMPLE DATE | DATE ANALYZED | SOIL STATUS | METHOD: EPA SW 846-8021B, 5030 |                 |                       |                        |                  |                    | METHOD: 8015M                               |  |  | TOTAL                                       | E 300            |
|------------------|--------------------|-------------|---------------|-------------|--------------------------------|-----------------|-----------------------|------------------------|------------------|--------------------|---|--|--|---|------------------|
|                  |                    |             |               |             | BENZENE (mg/Kg)                | TOLUENE (mg/Kg) | ETHYL-BENZENE (mg/Kg) | M.P. - XYLENES (mg/Kg) | O-XYLENE (mg/Kg) | TOTAL BTEX (mg/Kg) | GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg) | DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg) | ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg) | TPH C <sub>9</sub> -C <sub>35</sub> (mg/Kg) | CHLORIDE (mg/Kg) |
| Screened SP # 17 | N/A                | 9/16/2010   | 9/25/2010     | In-Situ     | <0.0214                        | <0.0427         | 0.1657                | 0.7331                 | 0.7071           | 1.6059             | 488   | 2780   | 97.3   | 3,365                                       |                  |
| Screened SP # 18 | N/A                | 9/16/2010   | 9/25/2010     | In-Situ     | <0.0213                        | 0.0451          | 0.2326                | 1.208                  | 1.099            | 2.585              | 538   | 3070   | 99.2   | 3,707                                       |                  |
| Screened SP # 19 | N/A                | 9/16/2010   | 9/25/2010     | In-Situ     | <0.0211                        | 0.0433          | 0.1387                | 1.033                  | 0.8556           | 2.071              | 501   | 3570   | 139  | 4,210                                       |                  |
| Screened SP # 20 | N/A                | 9/24/2010   | 10/1/2010     | In-Situ     | <0.0217                        | 0.0572          | 0.1376                | 0.5285                 | 0.274            | 0.9973             | 350   | 1130   | 56.1   | 1,536                                       |                  |
| Screened SP # 21 | N/A                | 9/24/2010   | 10/1/2010     | In-Situ     | <0.0221                        | <0.0441         | <0.0221               | 0.0755                 | 0.0322           | 0.1077             | 132   | 390  | 19.7   | 542   |                  |
| Screened SP # 22 | N/A                | 9/24/2010   | 10/1/2010     | In-Situ     | <0.0213                        | <0.0425         | 0.0423                | 0.2                    | 0.1756           | 0.4179             | 436   | 1930   | 85.1   | 2,451                                       |                  |
| Screened SP # 23 | N/A                | 9/24/2010   | 10/1/2010     | In-Situ     | <0.0217                        | <0.0433         | <0.0217               | 0.0925                 | 0.0518           | 0.1443             | 161   | 640  | 39.2   | 840   |                  |
| Screened SP # 24 | N/A                | 9/24/2010   | 10/1/2010     | In-Situ     | <0.0213                        | <0.0427         | 0.1157                | 0.8306                 | 0.7454           | 1.6917             | 850   | 2480   | 158  | 3,488                                       |                  |
| Screened SP # 25 | N/A                | 9/30/2010   | 10/9/2010     | In-Situ     | <0.0539                        | <0.1078         | 0.0652                | 0.1956                 | 0.0749           | 0.3357             | 132   | 1280   | 35   | 1,447                                       |                  |
| Screened SP # 26 | N/A                | 9/30/2010   | 10/9/2010     | In-Situ     | <0.0542                        | <0.1083         | <0.0542               | 0.1365                 | <0.0542          | 0.1365             | 104   | 1200   | 26.3   | 1,330                                       |                  |
| Screened SP # 27 | N/A                | 10/1/2010   | 10/9/2010     | In-Situ     | <0.0533                        | <0.1066         | <0.0533               | 0.1493                 | 0.0576           | 0.2069             | 156   | 1820   | 31.4   | 2,007                                       |                  |
| Screened SP # 28 | N/A                | 10/1/2010   | 10/9/2010     | In-Situ     | <0.0534                        | <0.1068         | <0.0534               | 0.1111                 | <0.0534          | 0.1111             | 96.4  | 1080   | 27.4   | 1,204                                       |                  |

## CONCENTRATIONS OF BENZENE, BTEX, CHLORIDES AND TOTAL DISSOLVED SOLIDS IN GROUNDWATER

[illegible]



**TABLE 3****GROUNDWATER ELEVATION DATA**

**PLAINS PIPELINE, L.P.  
14" VAC TO JAL LEGACY  
LEA COUNTY, NEW MEXICO  
PLAINS SRS NO: 2009-092  
NMOCD REFERENCE NO: 1RP-2162**

| <b>WELL<br/>NUMBER</b> | <b>DATE MEASURED</b> | <b>CASING WELL<br/>ELEVATION</b> | <b>DEPTH TO<br/>PRODUCT</b> | <b>DEPTH TO<br/>WATER</b> | <b>PSH<br/>THICKNESS</b> | <b>CORRECTED<br/>GROUNDWATER<br/>ELEVATION</b> |
|------------------------|----------------------|----------------------------------|-----------------------------|---------------------------|--------------------------|--|
| MW - 1                 | 7/6/2009             | 3,497.90                         | -                           | 55.38                     | 0.00                     | 3,442.52                                       |
| MW - 1                 | 10/21/2009           | 3,497.90                         | -                           | 55.42                     | 0.00                     | 3,442.48                                       |
| MW - 1                 | 3/11/2010            | 3,497.90                         | -                           | 50.57                     | 0.00                     | 3,447.33                                       |
| MW - 1                 | 6/4/2010             | 3,497.90                         | -                           | 55.54                     | 0.00                     | 3,442.36                                       |
| MW - 1                 | 9/23/2010            | 3,497.90                         | -                           | 50.66                     | 0.00                     | 3,447.24                                       |
| MW - 1                 | 11/5/2010            | 3,502.90                         | -                           | 60.54                     | 0.00                     | 3,442.36                                       |

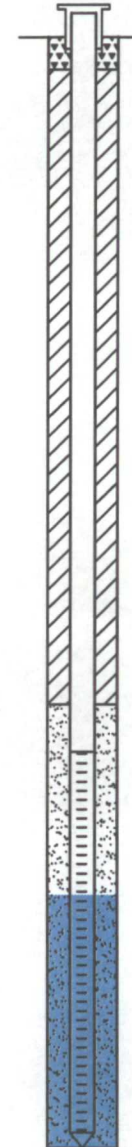
# **Appendices**

# **Appendix A**

## **Soil Boring & Monitor Well Logs**

# Soil Boring SB-1 / Monitor Well MW-1

| Depth<br>Below<br>Ground<br>Surface | Drilling<br>Depth | Soil<br>Columns | PID<br>Reading | Petroleum<br>Odor | Petroleum<br>Stain | Soil Description   |
|-------------------------------------|-------------------|-----------------|----------------|-------------------|--------------------|--|
| 10                                  | 0                 |                 |                | Moderate          | Slight             | 0 - 5' - Caliche, tan, damp  |
| 15                                  | 5                 |                 | (676)          | Heavy             | Slight             |  |
| 20                                  | 10                |                 | 1305           | Heavy             | Slight             | 5 - 15' - Caliche, tan, soft, dry with sand                        |
| 25                                  | 15                |                 | (1634)         |                   |                    |  |
| 30                                  | 20                |                 | 1355           | Moderate          | None               | 15 - 20' - Sand, brown, very fine grained with sandstone fragments |
| 35                                  | 25                |                 | (1904)         | Moderate          | None               | 20 - 30' - Sand, brown to red, clayey                              |
| 40                                  | 30                |                 | 196            | Moderate          | None               |  |
| 45                                  | 35                |                 | (224)          | Moderate          | None               | 30 - 40' - Gravel (Chert), tan to brown, dry                       |
| 50                                  | 40                |                 | 441            | Slight            | None               |  |
| 55                                  | 45                |                 | (169)          | Slight            | None               | 30 - 40' - Sand, brown, very fine grained with gravel (chert)      |
| 60                                  | 50                |                 | (836)          | Slight            | None               |  |
| 65                                  | 55                |                 | (123)          | None              | None               |  |
| 70                                  | 60                |                 | 92             | None              | None               | 50 - 70' - Sand, red to brown, very fine grained, damp             |
| 75                                  | 65                |                 |                |                   |                    |  |
| 80                                  | 70                |                 |                |                   |                    |  |



Date Drilled July 1, 2009  
 Thickness of Bentonite Seal 42 Ft  
 Depth of Exploratory Boring 70 Ft  
 Depth to Groundwater Approximately 64 Ft bgs  
 Ground Water Elevation \_\_\_\_\_

- Indicates the PSH level measured on \_\_\_\_\_
- Indicates the groundwater level measured on \_\_\_\_\_
- Indicates samples selected for Laboratory Analysis.
- PID Head-space reading in ppm obtained with a photo-ionization detector.

- Grout Surface Seal
- Bentonite Pellet Seal
- Sand Pack
- Screen

## Completion Notes

- 1.) The monitor well was advanced on date using air rotary drilling techniques.
- 2.) The well was constructed with 4" ID, 0.010 inch factory slotted, threaded joint, schedule 40 PVC pipe.
- 3.) The well is protected with a locked stick up steel cover and compression cap.
- 4.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

Soil Boring Details  
 SB-1  
 Monitor Well Details  
 MW-1

14-Inch Vac to Jal - Legacy  
 Lea County, New Mexico  
 Plains Pipeline, L.P.

Basin Environmental Consulting

Prep By: CDS

Checked By: CDS

August 4, 2009

Depth  
Below  
Ground  
Surface

Drilling  
Depth

Soil  
Columns

PID  
Reading




Petroleum  
Odor

Petroleum  
Stain

Soil Description

# Soil Boring SB-2

Date Drilled July 1, 2009  
 Thickness of Bentonite Seal 60 Ft  
 Depth of Exploratory Boring 60 Ft  
 Depth to Groundwater Approximately 64 Ft bgs  
 Ground Water Elevation \_\_\_\_\_

-  Indicates the PSH level measured on \_\_\_\_\_
-  Indicates the groundwater level measured on \_\_\_\_\_
-  Indicates samples selected for Laboratory Analysis.
- PID Head-space reading in ppm obtained with a photo-ionization detector.

10  
15  
20  
25  
30  
35  
40  
45  
50  
55  
60  
65  
70

0  
5  
10  
15  
20  
25  
30  
35  
40  
45  
50  
55  
60



TD

(1308)

1482

(1463)

529

(116)

27.1

(94)

178

(157)

(90.2)

(42.3)

46.1

Heavy Moderate

Heavy Moderate

Heavy None

Moderate None

Slight None

Slight None

Slight None

Slight None

Slight None

None None

None None

None None

0 - 10' - Caliche, tan, soft, dry

10 - 15' - Sand, brown, very fine grained with sandstone fragments, dry

15 - 20' - Sand, reddish brown, very fine grained with sandstone fragments, dry

20 - 25' - Clay, reddish brown, sandy with sandstone fragments, dry

25 - 30' - Sand, brown, some clay, damp

30 - 45' - Sand, brown, with gravel (chert), dry

30 - 45' - Sand, brown, very fine grained with gravel (chert), damp

## Notes

- 1.) The soil boring was advanced on date using air rotary drilling techniques.
- 2.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

Soil Boring Details  
SB-2

14-Inch Vac to Jal - Legacy  
Lea County, New Mexico  
Plains Pipeline, L.P.

Basin Environmental Consulting

Prep By: CDS

Checked By: CDS

August 4, 2009

# Soil Boring SB-3

Depth  
Below  
Ground  
Surface

Soil  
Columns




PID  
Reading

Petroleum  
Odor

Petroleum  
Stain

Soil Description

Date Drilled July 2, 2009  
Thickness of Bentonite Seal 70 Ft  
Depth of Exploratory Boring 70 Ft  
Depth to Groundwater Approximately 64 Ft bgs  
Ground Water Elevation \_\_\_\_\_

-  Indicates the PSH level measured on \_\_\_\_\_
-  Indicates the groundwater level measured on \_\_\_\_\_
-  Indicates samples selected for Laboratory Analysis.
- PID Head-space reading in ppm obtained with a photo-ionization detector.

0  
5  
10  
15  
20  
25  
30  
35  
40  
45  
50  
55  
60  
65  
70



TD

(1550)

1465

(1128)

1367

(1487)

381

(125)

87

(75)

(85.6)

(136)

96.1

157

84.4

Heavy

Heavy

Heavy

Heavy

Heavy

Slight

Heavy

Slight

Moderate

None

Moderate

None

Slight

None

None

None

None

None

None

None

None

None

None

None

None

None

None

None

0 - 5' - Caliche, tan, hard, dry

5 - 10' - Sand, tan, dry with caliche nodules

10 - 20' - Sand, tan to white, dry with caliche nodules

20 - 30' - Clay, brown, sandy with sandstone fragments, dry

30 - 35' - Clay, reddish brown, sandy, dry

35 - 50' - Sand, reddish brown, dry with gravel

50 - 70' - Sand, reddish brown, damp with gravel

## Notes

- 1.) The soil boring was advanced on date using air rotary drilling techniques.
- 2.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

Soil Boring Details  
SB-3

14-Inch Vac to Jal - Legacy  
Lea County, New Mexico  
Plains Pipeline, L.P.

Basin Environmental Consulting

Prep By: CDS

Checked By: CDS

August 4, 2009



Depth  
Below  
Ground  
Surface



Soil Columns

PID Reading

Petroleum Odor

Petroleum Stain

## Soil Description

0 - 1' - Clay, brown, sandy with some white caliche  
 1 - 6' - Caliche, white to grey, sandy, soft, dry  
 6 - 20' - Sand, light brown and caliche, white to grey, soft, dry  
 20 - 25' - Sand, brown to dark brown, coarse grained, clayey with some sandstone fragments  
 25 - 27' - Clay, dark brown with some sandstone fragments, dry  
 27 - 30' - Sand, dark brown, very fine grained with some sandstone fragments, dry  
 30 - 33' - Sand, dark brown, very fine grained with some sandstone fragments and clayey, dry  
 33 - 35' - Sand, reddish brown, very fine grained with some sandstone fragments  
 35 - 55' - Sand, dark brown to reddish brown with some sandstone fragments, dry, Lost circulation at 55' bgs, No sample collected at 55' bgs  
 55 - 60' - Sand, dark brown to reddish brown with some sandstone fragments and some well rounded gravel, dry  
 60 - 75' - Sand, brown with some sandstone, No samples collected due to lost circulation, wet

## Soil Boring SB-4

Date Drilled December 10, 2009  
 Thickness of Bentonite Seal 75 Ft  
 Depth of Exploratory Boring 75 Ft  
 Depth to Groundwater  
 Ground Water Elevation

- Indicates the PSH level measured on
- Indicates the groundwater level measured on
- Indicates samples selected for Laboratory Analysis.
- PID Head-space reading in ppm obtained with a photo-ionization detector.

### Notes

- 1.) The soil boring was advanced on date using air rotary drilling techniques.
- 2.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

Soil Boring Details  
SB-4

14-Inch Vac to Jal - Legacy  
 Lea County, New Mexico  
 Plains Pipeline, L.P.

Basin Environmental Consulting

Prep By: CDS

Checked By: CDS

May 5, 2010

0  
Below  
Ground  
Surface



Soil  
Columns

PID  
Reading

Petroleum  
Odor

Petroleum  
Stain

## Soil Description

## Soil Boring SB-5

Date Drilled December 10, 2009

Thickness of Bentonite Seal 80 Ft

Depth of Exploratory Boring 80 Ft

Depth to Groundwater

Ground Water Elevation

Indicates the PSH level measured on

Indicates the groundwater level measured on

Indicates samples selected for Laboratory Analysis.

PID Head-space reading in ppm obtained with a photo-ionization detector.

### Notes

- 1.) The soil boring was advanced on date using air rotary drilling techniques.
- 2.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

Soil Boring Details  
SB-5

14-Inch Vac to Jal - Legacy  
Lea County, New Mexico  
Plains Pipeline, L.P.

Basin Environmental Consulting

Prep By: CDS

Checked By: CDS

May 5, 2010



# **Appendix B**

## **Analytical Reports**

**Analytical Report 330360**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14" Vacuum to Jal Lagacy**  
**2009-092**

**20-APR-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



20-APR-09

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

Reference: XENCO Report No: **330360**  
**14" Vacuum to Jal Lagacy**  
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 330360. 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. 330360 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 330360



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vacuum to Jal Lagacy

| Sample Id         | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|-------------------|--------|-----------------|--------------|---------------|
| Chloride Baseline | S      | Apr-15-09 15:00 |              | 330360-001    |



# Certificate of Analysis Summary 330360

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vacuum to Jal Lagacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Fri Apr-17-09 08:07 am


Report Date: 20-APR-09

Project Manager: Brent Barron, II

|                           |  |  |  |  |  |  |
|---------------------------|--|--|--|--|--|--|
| <b>Analysis Requested</b> | <b>Lab Id:</b> 330360-001<br><b>Field Id:</b> Chloride Baseline<br><b>Depth:</b><br><b>Matrix:</b> SOIL<br><b>Sampled:</b> Apr-15-09 15:00 |  |  |  |  |  |
| <b>Anions by EPA 300</b>  | <b>Extracted:</b><br><b>Analyzed:</b> Apr-17-09 14:47<br><b>Units/RL:</b> mg/kg RL   |  |  |  |  |  |
| Chloride                  | 796 10.3   |  |  |  |  |  |
| <b>Percent Moisture</b>   | <b>Extracted:</b><br><b>Analyzed:</b> Apr-17-09 17:00<br><b>Units/RL:</b> % RL   |  |  |  |  |  |
| Percent Moisture          | 3.28 1.00  |  |  |  |  |  |

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

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Brent Barron  
Odessa Laboratory Director

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

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

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



## Blank Spike Recovery



Project Name: 14" Vacuum to Jal Lagacy

Work Order #: 330360

Project ID:

2009-092

Lab Batch #: 756272

Sample: 756272-1-BKS

Matrix: Solid

Date Analyzed: 04/17/2009

Date Prepared: 04/17/2009

Analyst: LATCOR

Reporting Units: mg/kg

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

| Anions by EPA 300<br><br>Analytes | Blank<br>Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|-----------------------------------|------------------------|-----------------------|---------------------------------|-----------------------------|-------------------------|-------|
| Chloride                          | ND                     | 10.0                  | 10.5                            | 105                         | 80-120                  |       |

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

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



## Form 3 - MS Recoveries

Project Name: 14" Vacuum to Jal Lagacy



Work Order #: 330360

Lab Batch #: 756272

Date Analyzed: 04/17/2009

QC- Sample ID: 330360-001 S

Reporting Units: mg/kg

Date Prepared: 04/17/2009

Project ID: 2009-092

Analyst: LATCOR

Batch #: 1

Matrix: Soil

### MATRIX / MATRIX SPIKE RECOVERY STUDY

| Inorganic Anions by EPA 300 | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | %R<br>[D] | Control<br>Limits<br>%R | Flag |
|-----------------------------|-----------------------------------|-----------------------|--------------------------------|-----------|-------------------------|------|
| Analytes                    |                                   |                       |                                |           |                         |      |
| Chloride                    | 796                               | 207                   | 939                            | 69        | 80-120                  | X    |

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

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

All Results are based on MDL and Validated for QC Purposes





## Sample Duplicate Recovery



Project Name: 14" Vacuum to Jal Lagacy

Work Order #: 330360

Lab Batch #: 756272

Date Analyzed: 04/17/2009

QC- Sample ID: 330360-001 D

Reporting Units: mg/kg

Project ID: 2009-092

Analyst: LATCOR

Batch #: 1

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Anions by EPA 300                  | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Chloride                           | 796                      | 793                         | 0   | 20                  |      |

Lab Batch #: 756187

Date Analyzed: 04/17/2009

QC- Sample ID: 330355-021 D

Reporting Units: %

Date Prepared: 04/17/2009

Analyst: BEV

Batch #: 1

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 7.90                     | 7.38                        | 7   | 20                  |      |

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

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

## Environmental Lab of Texas

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

Project Manager: Curt Stanley


Company Name: Basin Environmental Service Technologies, LLC

Company Address: P. O. Box 301

City/State/Zip: Lovington, NM 88260

Telephone No: (575) 605-7210

Fax No: (575) 396-1429

Sampler Signature: 

e-mail: cdstanley@basin-cons

Project Name: 14" Vacuum to Jal Legacy  
Project #: 2009-092  
Project Loc: Lea County: NM  
PO #: PAA - J. Henry  
Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Amil D. Stanley e-mail: cdstanley@basin-consulting.com

[illegible]

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

Client: Plains / Basin  
Date/ Time: 04-17-09 @ 0807  
Lab ID #: 330360  
Initials: JMF

**Sample Receipt Checklist**

|     |  |   |                             | Client Initials          |
|-----|--|---|-----------------------------|--------------------------|
| #1  | Temperature of container/ cooler?                          | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | 2.5 °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? / label | <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 333087**

**for**

**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14" Vac to Jal Legacy**

**2009-92**

**29-MAY-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**



29-MAY-09

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

Reference: XENCO Report No: **333087**  
**14" Vac to Jal Legacy**  
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 333087. 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. 333087 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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## Sample Cross Reference 333087



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

| Sample Id           | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|---------------------|--------|-----------------|--------------|---------------|
| Stockpile # 1       | S      | May-18-09 14:30 |              | 333087-001    |
| Stockpile # 2       | S      | May-18-09 14:40 |              | 333087-002    |
| Main Exc. - NWSW    | S      | May-18-09 14:45 |              | 333087-003    |
| Main Exc. - NESW    | S      | May-18-09 14:50 |              | 333087-004    |
| Main Exc. - WSW     | S      | May-18-09 15:00 |              | 333087-005    |
| Main Exc. - ESW     | S      | May-18-09 15:10 |              | 333087-006    |
| Main Exc. Floor # 1 | S      | May-18-09 15:20 |              | 333087-007    |
| Main Exc. Floor # 2 | S      | May-18-09 15:30 |              | 333087-008    |
| Main Exc. Floor # 3 | S      | May-18-09 15:40 |              | 333087-009    |
| Main Exc. Floor # 4 | S      | May-18-09 15:50 |              | 333087-010    |



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: 14" Vac to Jal Legacy*

*Project ID: 2009-92*

*Work Order Number: 333087*

*Report Date: 29-MAY-09*

*Date Received: 05/19/2009*

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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-759451 Percent Moisture

None

Batch: LBA-759476 TPH by SW8015 Mod  
SW8015MOD\_NM

Batch 759476, 1-Chlorooctane recovered above QC limits . Matrix interferences is suspected;  
data not confirmed by re-analysis

Samples affected are: 333087-010.

Batch: LBA-759977 BTEX-MTBE EPA 8021B  
SW8021BM

Batch 759977, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is  
suspected; data not confirmed by re-analysis

Samples affected are: 333087-003,333087-008.

4-Bromofluorobenzene recovered below QC limits; QC Data not confirmed by re-analysis.

Samples affected are: 530571-1-BLK.

SW8021BM

Batch 759977, Benzene, Toluene recovered above QC limits in the Matrix Spike and Matrix  
Spike Duplicate.

Samples affected are: 333087-003, -010, -008, -005, -007, -009, -004, -006.

The Laboratory Control Sample for Toluene, Benzene is within laboratory Control Limits



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: 14" Vac to Jal Legacy*

*Project ID: 2009-92*

*Work Order Number: 333087*

*Report Date: 29-MAY-09*

*Date Received: 05/19/2009*

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*Batch: LBA-760298 BTEX-MTBE EPA 8021B  
SW8021BM*

*Batch 760298, 4-Bromofluorobenzene recovered below QC limits; QC Data not confirmed by re-analysis. Samples affected are: 530774-1-BLK.*

*SW8021BM*

*Batch 760298, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.*

*Samples affected are: 333087-001.*

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

*Batch: LBA-760452 BTEX-MTBE EPA 8021B  
BTEX by 8021B*

*760452, The Beginning and ending CCV for this batch was within QC limits, However, due to carry-over from an extremely contaminated sample immediately prior to it, the Middle CCV was above the QC limits. All Batch QC and sample surrogates were within QC limits, therefore this QC failure has negligible effect on this sample.*





# Certificate of Analysis Summary 333087

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy



Project Id: 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Tue May-19-09 08:12 am


Report Date: 29-MAY-09

Project Manager: Brent Barron, II

| Analysis Requested                 | Lab Id:    | 333087-001      | 333087-002      | 333087-003      | 333087-004      | 333087-005      | 333087-006      |
|------------------------------------|------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                                    | Field Id:  | Stockpile # 1   | Stockpile # 2   | Main Exc - NWSW | Main Exc - NESW | Main Exc. - WSW | Main Exc. - ESW |
|                                    | Depth:     |                 |                 |                 |                 |                 |                 |
|                                    | Matrix:    | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            |
|                                    | Sampled:   | May-18-09 14 30 | May-18-09 14:40 | May-18-09 14:45 | May-18-09 14 50 | May-18-09 15.00 | May-18-09 15:10 |
| BTEX by EPA 8021B                  | Extracted: | May-27-09 10:00 | May-28-09 16:00 | May-22-09 12:09 | May-22-09 12:09 | May-22-09 12 09 | May-22-09 12:09 |
|                                    | Analyzed:  | May-27-09 13:18 | May-28-09 16:28 | May-22-09 19:03 | May-22-09 19:24 | May-22-09 19:46 | May-22-09 20:07 |
|                                    | Units/RL:  | mg/kg           | mg/kg           | mg/kg           | mg/kg           | mg/kg           | mg/kg           |
|                                    |            | RL              | RL              | RL              | RL              | RL              | RL              |
| Benzene                            |            | 3.549 0.5545    | 23.20 2.187     | 0.0073 0.0010   | 0.0013 0.0011   | ND 0.0011       | ND 0.0010       |
| Toluene                            |            | 88.56 1.109     | 233.0 4.373     | 0.0354 0.0020   | ND 0.0022       | ND 0.0022       | ND 0.0020       |
| Ethylbenzene                       |            | 63.06 0.5545    | 111.0 2.187     | 0.0158 0.0010   | ND 0.0011       | ND 0.0011       | ND 0.0010       |
| m,p-Xylenes                        |            | 88.09 1.109     | 165.8 4.373     | 0.0249 0.0020   | ND 0.0022       | ND 0.0022       | ND 0.0020       |
| o-Xylene                           |            | 32.31 0.5545    | 12.40 2.187     | 0.0090 0.0010   | ND 0.0011       | ND 0.0011       | ND 0.0010       |
| Total Xylenes                      |            | 120.4 0.5545    | 178.2 2.187     | 0.0339 0.0010   | ND 0.0011       | ND 0.0011       | ND 0.0010       |
| Total BTEX                         |            | 275.569 0.5545  | 545.4 2.187     | 0.0924 0.0010   | 0.0013 0.0011   | ND 0.0011       | ND 0.0010       |
| Percent Moisture                   | Extracted: | May-20-09 08:59 | May-20-09 08:59 | May-20-09 08:59 | May-20-09 08:59 | May-20-09 08:59 | May-20-09 08:59 |
|                                    | Analyzed:  | May-20-09 08:59 | May-20-09 08:59 | May-20-09 08:59 | May-20-09 08:59 | May-20-09 08:59 | May-20-09 08:59 |
|                                    | Units/RL:  | % RL            | % RL            | % RL            | % RL            | % RL            | % RL            |
| Percent Moisture                   |            | 9.83 1.00       | 8.54 1.00       | 2.34 1.00       | 8.37 1.00       | 7.38 1.00       | 2.31 1.00       |
| TPH By SW8015 Mod                  | Extracted: | May-19-09 12:58 | May-19-09 12:58 | May-19-09 12:58 | May-19-09 12:58 | May-19-09 12:58 | May-19-09 12:58 |
|                                    | Analyzed:  | May-19-09 15:59 | May-19-09 16:24 | May-19-09 16:49 | May-19-09 17:14 | May-19-09 17:39 | May-19-09 18:04 |
|                                    | Units/RL:  | mg/kg           | mg/kg           | mg/kg           | mg/kg           | mg/kg           | mg/kg           |
|                                    |            | RL              | RL              | RL              | RL              | RL              | RL              |
| C6-C12 Gasoline Range Hydrocarbons |            | 3990 333        | 8260 164        | 18.0 15.4       | ND 16.4         | ND 16.2         | ND 15.4         |
| C12-C28 Diesel Range Hydrocarbons  |            | 4890 333        | 9340 164        | 18.1 15.4       | 43.3 16.4       | ND 16.2         | 21.3 15.4       |
| C28-C35 Oil Range Hydrocarbons     |            | ND 333          | 669 164         | ND 15.4         | ND 16.4         | ND 16.2         | ND 15.4         |
| Total TPH                          |            | 8880 333        | 18269 164       | 36.1 15.4       | 43.3 16.4       | ND 16.2         | 21.3 15.4       |

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

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Brent Barron  
Odessa Laboratory Director



# Certificate of Analysis Summary 333087

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



Project Id: 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14" Vac to Jal Legacy

Date Received in Lab: Tue May-19-09 08:12 am


Report Date: 29-MAY-09

Project Manager: Brent Barron, II

| <i>Analysis Requested</i>          | <i>Lab Id:</i>    | 333087-007         | 333087-008          | 333087-009         | 333087-010         |  |  |
|------------------------------------|-------------------|--------------------|---------------------|--------------------|--------------------|--|--|
|                                    | <i>Field Id:</i>  | Main Exc Floor # 1 | Main Exc. Floor # 2 | Main Exc Floor # 3 | Main Exc Floor # 4 |  |  |
|                                    | <i>Depth:</i>     |                    |                     |                    |                    |  |  |
|                                    | <i>Matrix:</i>    | SOIL               | SOIL                | SOIL               | SOIL               |  |  |
|                                    | <i>Sampled:</i>   | May-18-09 15:20    | May-18-09 15:30     | May-18-09 15:40    | May-18-09 15:50    |  |  |
| <b>BTEX by EPA 8021B</b>           | <i>Extracted:</i> | May-22-09 12:09    | May-22-09 12:09     | May-22-09 12:09    | May-22-09 12:09    |  |  |
|                                    | <i>Analyzed:</i>  | May-22-09 21:11    | May-22-09 17:58     | May-22-09 21:33    | May-22-09 18:19    |  |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL           | mg/kg RL            | mg/kg RL           | mg/kg RL           |  |  |
| Benzene                            |                   | 0.0013 0.0010      | ND 2.397            | 0.0022 0.0010      | 9.459 0.5842       |  |  |
| Toluene                            |                   | 0.0033 0.0021      | 26.82 4.793         | 0.0071 0.0020      | 106.7 1.168        |  |  |
| Ethylbenzene                       |                   | ND 0.0010          | 41.51 2.397         | 0.0013 0.0010      | 84.72 0.5842       |  |  |
| m,p-Xylenes                        |                   | ND 0.0021          | 71.76 4.793         | ND 0.0020          | 123.0 1.168        |  |  |
| o-Xylene                           |                   | ND 0.0010          | 27.42 2.397         | ND 0.0010          | 47.24 0.5842       |  |  |
| Total Xylenes                      |                   | ND 0.0010          | 99.18 2.397         | ND 0.0010          | 170.24 0.5842      |  |  |
| Total BTEX                         |                   | 0.0046 0.0010      | 167.51 2.397        | 0.0106 0.0010      | 371.119 0.5842     |  |  |
| <b>Percent Moisture</b>            | <i>Extracted:</i> | May-20-09 08:59    | May-20-09 08:59     | May-20-09 08:59    | May-20-09 08:59    |  |  |
|                                    | <i>Analyzed:</i>  |                    |                     |                    |                    |  |  |
|                                    | <i>Units/RL:</i>  | % RL               | % RL                | % RL               | % RL               |  |  |
| Percent Moisture                   |                   | 2.77 1.00          | 16.55 1.00          | ND 1.00            | 14.42 1.00         |  |  |
| <b>TPH By SW8015 Mod</b>           | <i>Extracted:</i> | May-19-09 12:58    | May-19-09 12:58     | May-19-09 12:58    | May-19-09 12:58    |  |  |
|                                    | <i>Analyzed:</i>  | May-19-09 18:29    | May-19-09 18:54     | May-19-09 19:44    | May-19-09 20:09    |  |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL           | mg/kg RL            | mg/kg RL           | mg/kg RL           |  |  |
| C6-C12 Gasoline Range Hydrocarbons |                   | ND 15.4            | 4460 359            | 50.9 15.1          | 4970 175           |  |  |
| C12-C28 Diesel Range Hydrocarbons  |                   | 19.8 15.4          | 7640 359            | 1460 15.1          | 7740 175           |  |  |
| C28-C35 Oil Range Hydrocarbons     |                   | ND 15.4            | ND 359              | 95.4 15.1          | 523 175            |  |  |
| Total TPH                          |                   | 19.8 15.4          | 12100 359           | 1606.3 15.1        | 13233 175          |  |  |

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

- 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: 14" Vac to Jal Legacy

Work Orders : 333087,

Project ID: 2009-92

Lab Batch #: 759977

Sample: 530571-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/22/09 14:44

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0297              | 0.0300             | 99                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0333              | 0.0300             | 111                   | 80-120               |       |

Lab Batch #: 759977

Sample: 530571-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/22/09 15:06

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0297              | 0.0300             | 99                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0339              | 0.0300             | 113                   | 80-120               |       |

Lab Batch #: 759977

Sample: 530571-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/22/09 15:49

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0253              | 0.0300             | 84                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0230              | 0.0300             | 77                    | 80-120               | *     |

Lab Batch #: 759977

Sample: 333087-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/22/09 17:58

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0233              | 0.0300             | 78                    | 80-120               | *     |
| 4-Bromofluorobenzene          | 0.0377              | 0.0300             | 126                   | 80-120               | *     |

Lab Batch #: 759977

Sample: 333087-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/22/09 18:19

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0249              | 0.0300             | 83                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0416              | 0.0300             | 139                   | 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: 14" Vac to Jal Legacy

Work Orders : 333087,

Project ID: 2009-92

Lab Batch #: 759977

Sample: 333087-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/22/09 19:03

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0237              | 0.0300             | 79                    | 80-120               | *     |
| 4-Bromofluorobenzene          | 0.0337              | 0.0300             | 112                   | 80-120               |       |

Lab Batch #: 759977

Sample: 333087-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/22/09 19:24

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0245              | 0.0300             | 82                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0343              | 0.0300             | 114                   | 80-120               |       |

Lab Batch #: 759977

Sample: 333087-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/22/09 19:46

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0243              | 0.0300             | 81                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0332              | 0.0300             | 111                   | 80-120               |       |

Lab Batch #: 759977

Sample: 333087-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/22/09 20:07

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0246              | 0.0300             | 82                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0303              | 0.0300             | 101                   | 80-120               |       |

Lab Batch #: 759977

Sample: 333087-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/22/09 21:11

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0242              | 0.0300             | 81                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0255              | 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: 14" Vac to Jal Legacy

Work Orders : 333087,

Project ID: 2009-92

Lab Batch #: 759977

Sample: 333087-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/22/09 21:33

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0240              | 0.0300             | 80                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0353              | 0.0300             | 118                   | 80-120               |       |

Lab Batch #: 759977

Sample: 333087-003 S / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/23/09 00:45

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0260              | 0.0300             | 87                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0345              | 0.0300             | 115                   | 80-120               |       |

Lab Batch #: 759977

Sample: 333087-003 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/23/09 01:07

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0256              | 0.0300             | 85                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0333              | 0.0300             | 111                   | 80-120               |       |

Lab Batch #: 760298

Sample: 530774-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/27/09 10:23

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0332              | 0.0300             | 111                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0242              | 0.0300             | 81                    | 80-120               |       |

Lab Batch #: 760298

Sample: 530774-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/27/09 10:44

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0331              | 0.0300             | 110                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0251              | 0.0300             | 84                    | 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: 14" Vac to Jal Legacy

Work Orders : 333087,

Project ID: 2009-92

Lab Batch #: 760298

Sample: 530774-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/27/09 11:27

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0283              | 0.0300             | 94                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0164              | 0.0300             | 55                    | 80-120               | *     |

Lab Batch #: 760298

Sample: 333087-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/27/09 13:18

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0264              | 0.0300             | 88                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0281              | 0.0300             | 94                    | 80-120               |       |

Lab Batch #: 760298

Sample: 333233-020 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/27/09 19:45

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0323              | 0.0300             | 108                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0291              | 0.0300             | 97                    | 80-120               |       |

Lab Batch #: 760298

Sample: 333233-020 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/27/09 20:07

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0326              | 0.0300             | 109                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0291              | 0.0300             | 97                    | 80-120               |       |

Lab Batch #: 760452

Sample: 530869-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/28/09 13:01

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0305              | 0.0300             | 102                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0318              | 0.0300             | 106                   | 80-120               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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

## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 333087,

Lab Batch #: 760452

Sample: 530869-1-BSD / BSD

Project ID: 2009-92

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/28/09 13:22

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|----------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| Analytes             |                     |                    |                       |                      |       |
| 1,4-Difluorobenzene  | 0.0298              | 0.0300             | 99                    | 80-120               |       |
| 4-Bromofluorobenzene | 0.0308              | 0.0300             | 103                   | 80-120               |       |

Lab Batch #: 760452

Sample: 530869-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/28/09 14:05

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|----------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| Analytes             |                     |                    |                       |                      |       |
| 1,4-Difluorobenzene  | 0.0262              | 0.0300             | 87                    | 80-120               |       |
| 4-Bromofluorobenzene | 0.0248              | 0.0300             | 83                    | 80-120               |       |

Lab Batch #: 760452

Sample: 333087-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/28/09 16:28

### SURROGATE RECOVERY STUDY

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

Lab Batch #: 759476

Sample: 530300-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/19/09 13:56

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| Analytes          |                     |                    |                       |                      |       |
| 1-Chlorooctane    | 103                 | 100                | 103                   | 70-135               |       |
| o-Terphenyl       | 45.8                | 50.0               | 92                    | 70-135               |       |

Lab Batch #: 759476

Sample: 530300-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/19/09 14:20

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| Analytes          |                     |                    |                       |                      |       |
| 1-Chlorooctane    | 102                 | 100                | 102                   | 70-135               |       |
| o-Terphenyl       | 46.0                | 50.0               | 92                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 333087,

Project ID: 2009-92

Lab Batch #: 759476

Sample: 530300-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/19/09 14:45

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 91.9                | 100                | 92                    | 70-135               |       |
| o-Terphenyl                   | 52.3                | 50.0               | 105                   | 70-135               |       |

Lab Batch #: 759476

Sample: 333087-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/19/09 15:59

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 119                 | 100                | 119                   | 70-135               |       |
| o-Terphenyl                   | 48.6                | 50.0               | 97                    | 70-135               |       |

Lab Batch #: 759476

Sample: 333087-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/19/09 16:24

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 127                 | 100                | 127                   | 70-135               |       |
| o-Terphenyl                   | 52.7                | 50.0               | 105                   | 70-135               |       |

Lab Batch #: 759476

Sample: 333087-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/19/09 16:49

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 88.6                | 100                | 89                    | 70-135               |       |
| o-Terphenyl                   | 49.7                | 50.0               | 99                    | 70-135               |       |

Lab Batch #: 759476

Sample: 333087-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/19/09 17:14

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 86.3                | 100                | 86                    | 70-135               |       |
| o-Terphenyl                   | 49.1                | 50.0               | 98                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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

# Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 333087,

Project ID: 2009-92

Lab Batch #: 759476

Sample: 333087-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/19/09 17:39

## SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 90.2                | 100                | 90                    | 70-135               |       |
| o-Terphenyl                   | 50.9                | 50.0               | 102                   | 70-135               |       |

Lab Batch #: 759476

Sample: 333087-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/19/09 18:04

## SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 107                 | 100                | 107                   | 70-135               |       |
| o-Terphenyl                   | 59.2                | 50.0               | 118                   | 70-135               |       |

Lab Batch #: 759476

Sample: 333087-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/19/09 18:29

## SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 90.6                | 100                | 91                    | 70-135               |       |
| o-Terphenyl                   | 50.7                | 50.0               | 101                   | 70-135               |       |

Lab Batch #: 759476

Sample: 333087-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/19/09 18:44

## SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 118                 | 100                | 118                   | 70-135               |       |
| o-Terphenyl                   | 46.4                | 50.0               | 93                    | 70-135               |       |

Lab Batch #: 759476

Sample: 333087-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/19/09 19:44

## SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 89.3                | 100                | 89                    | 70-135               |       |
| o-Terphenyl                   | 49.7                | 50.0               | 99                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 333087,

Project ID: 2009-92

Lab Batch #: 759476

Sample: 333087-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/19/09 20:09

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 140                 | 100                | 140                   | 70-135               | *     |
| o-Terphenyl                   | 53.8                | 50.0               | 108                   | 70-135               |       |

Lab Batch #: 759476

Sample: 333087-005 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/19/09 23:53

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 107                 | 100                | 107                   | 70-135               |       |
| o-Terphenyl                   | 49.2                | 50.0               | 98                    | 70-135               |       |

Lab Batch #: 759476

Sample: 333087-005 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/20/09 00:18

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 108                 | 100                | 108                   | 70-135               |       |
| o-Terphenyl                   | 49.2                | 50.0               | 98                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 333087

Analyst: BRB

Date Prepared: 05/22/2009

Project ID: 2009-92

Date Analyzed: 05/22/2009

Lab Batch ID: 759977

Sample: 530571-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| BTEX by EPA 8021B | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|-------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes          |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| Benzene           | ND                            | 0.1000                | 0.1183                          | 118                         | 0.1                   | 0.1172                                    | 117                           | 1        | 70-130                  | 35                        |      |
| Toluene           | ND                            | 0.1000                | 0.1143                          | 114                         | 0.1                   | 0.1132                                    | 113                           | 1        | 70-130                  | 35                        |      |
| Ethylbenzene      | ND                            | 0.1000                | 0.1190                          | 119                         | 0.1                   | 0.1181                                    | 118                           | 1        | 71-129                  | 35                        |      |
| m,p-Xylenes       | ND                            | 0.2000                | 0.2396                          | 120                         | 0.2                   | 0.2368                                    | 118                           | 1        | 70-135                  | 35                        |      |
| o-Xylene          | ND                            | 0.1000                | 0.1148                          | 115                         | 0.1                   | 0.1140                                    | 114                           | 1        | 71-133                  | 35                        |      |

Analyst: ASA

Date Prepared: 05/27/2009

Date Analyzed: 05/27/2009

Lab Batch ID: 760298

Sample: 530774-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| BTEX by EPA 8021B | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|-------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes          |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| Benzene           | ND                            | 0.1000                | 0.1000                          | 100                         | 0.1                   | 0.1002                                    | 100                           | 0        | 70-130                  | 35                        |      |
| Toluene           | ND                            | 0.1000                | 0.0963                          | 96                          | 0.1                   | 0.0968                                    | 97                            | 1        | 70-130                  | 35                        |      |
| Ethylbenzene      | ND                            | 0.1000                | 0.1030                          | 103                         | 0.1                   | 0.1046                                    | 105                           | 2        | 71-129                  | 35                        |      |
| m,p-Xylenes       | ND                            | 0.2000                | 0.2083                          | 104                         | 0.2                   | 0.2113                                    | 106                           | 1        | 70-135                  | 35                        |      |
| o-Xylene          | ND                            | 0.1000                | 0.0985                          | 99                          | 0.1                   | 0.1001                                    | 100                           | 2        | 71-133                  | 35                        |      |

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

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

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

All results are based on MDL and Validated for QC Purposes



## BS / BSD Recoveries



**Project Name: 14" Vac to Jal Legacy**

**Work Order #: 333087**

**Analyst: BRB**

**Date Prepared: 05/28/2009**

**Project ID: 2009-92**

**Date Analyzed: 05/28/2009**

**Lab Batch ID: 760452**

**Sample: 530869-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| <b>BTEX by EPA 8021B</b> | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|--------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>          |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| Benzene                  | ND                                     | 0.1000                         | 0.0958                                    | 96                                    | 0.1                            | 0.0944  | 94                                      | 1                | 70-130                           | 35                                 |             |
| Toluene                  | ND                                     | 0.1000                         | 0.0931                                    | 93                                    | 0.1                            | 0.0922  | 92                                      | 1                | 70-130                           | 35                                 |             |
| Ethylbenzene             | ND                                     | 0.1000                         | 0.0987                                    | 99                                    | 0.1                            | 0.0973  | 97                                      | 1                | 71-129                           | 35                                 |             |
| m,p-Xylenes              | ND                                     | 0.2000                         | 0.2007                                    | 100                                   | 0.2                            | 0.1975  | 99                                      | 2                | 70-135                           | 35                                 |             |
| o-Xylene                 | ND                                     | 0.1000                         | 0.0952                                    | 95                                    | 0.1                            | 0.0940  | 94                                      | 1                | 71-133                           | 35                                 |             |

**Analyst: BHW**

**Date Prepared: 05/19/2009**

**Date Analyzed: 05/19/2009**

**Lab Batch ID: 759476**

**Sample: 530300-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| <b>TPH By SW8015 Mod</b>           | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|------------------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>                    |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| C6-C12 Gasoline Range Hydrocarbons | ND                                     | 1000                           | 1010                                      | 101                                   | 1000                           | 990   | 99                                      | 2                | 70-135                           | 35                                 |             |
| C12-C28 Diesel Range Hydrocarbons  | ND                                     | 1000                           | 964                                       | 96                                    | 1000                           | 954   | 95                                      | 1                | 70-135                           | 35                                 |             |

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

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

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

All results are based on MDL and Validated for QC Purposes



# Form 3 - MSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 333087

Project ID: 2009-92

Lab Batch ID: 759977

QC- Sample ID: 333087-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 05/23/2009

Date Prepared: 05/22/2009

Analyst: BRB

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|-------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| Benzene                       | 0.0073                            | 0.1024                | 0.2245                         | 212                           | 0.1024                | 0.2088                                   | 197                         | 7        | 70-130                  | 35                        | X    |
| Toluene                       | 0.0354                            | 0.1024                | 0.3688                         | 326                           | 0.1024                | 0.3445                                   | 302                         | 7        | 70-130                  | 35                        | X    |
| Ethylbenzene                  | 0.0158                            | 0.1024                | 0.1478                         | 129                           | 0.1024                | 0.1382                                   | 120                         | 7        | 71-129                  | 35                        |      |
| m,p-Xylenes                   | 0.0249                            | 0.2048                | 0.2332                         | 102                           | 0.2048                | 0.2213                                   | 96                          | 5        | 70-135                  | 35                        |      |
| o-Xylene                      | 0.0090                            | 0.1024                | 0.1041                         | 93                            | 0.1024                | 0.0991                                   | 88                          | 5        | 71-133                  | 35                        |      |

Lab Batch ID: 760298

QC- Sample ID: 333233-020 S

Batch #: 1 Matrix: Soil

Date Analyzed: 05/27/2009

Date Prepared: 05/27/2009

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|-------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| Benzene                       | ND                                | 0.1092                | 0.0619                         | 57                            | 0.1092                | 0.0656                                   | 60                          | 6        | 70-130                  | 35                        | X    |
| Toluene                       | ND                                | 0.1092                | 0.0606                         | 55                            | 0.1092                | 0.0644                                   | 59                          | 6        | 70-130                  | 35                        | X    |
| Ethylbenzene                  | ND                                | 0.1092                | 0.0677                         | 62                            | 0.1092                | 0.0720                                   | 66                          | 6        | 71-129                  | 35                        | X    |
| m,p-Xylenes                   | ND                                | 0.2183                | 0.1392                         | 64                            | 0.2183                | 0.1474                                   | 68                          | 6        | 70-135                  | 35                        | X    |
| o-Xylene                      | ND                                | 0.1092                | 0.0628                         | 58                            | 0.1092                | 0.0671                                   | 61                          | 7        | 71-133                  | 35                        | X    |

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

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

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



## Form 3 - MS / MSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 333087

Project ID: 2009-92

Lab Batch ID: 759476

QC- Sample ID: 333087-005 S

Batch #: 1 Matrix: Soil

Date Analyzed: 05/19/2009

Date Prepared: 05/19/2009

Analyst: BHW

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes      | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| C6-C12 Gasoline Range Hydrocarbons | ND                                | 1080                  | 1150                           | 106                           | 1080                  | 1160                                     | 107                         | 1        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | ND                                | 1080                  | 1100                           | 102                           | 1080                  | 1120                                     | 104                         | 2        | 70-135                  | 35                        |      |

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

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

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



## Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 333087

Lab Batch #: 759451

Date Analyzed: 05/20/2009

QC- Sample ID: 333088-001 D

Reporting Units: %

Project ID: 2009-92

Analyst: BEV

Date Prepared: 05/20/2009

Batch #: 1

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 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



## 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:** Camille Bryant

**Project Name: 14" Vac to Jal Legacy**

Company Name **Basin Environmental Consulting, LLC**

Project #: SRS# 2009-92

Company Address, P.O. Box 381

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA-J. Henry

Telephone No: (575) 605-7210

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: \_\_\_\_\_

e-mail: [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]

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

Client: Basin / Plains  
Date/ Time: 05/19/09 8:12  
Lab ID #: 333087  
Initials: AWA

**Sample Receipt Checklist**

|     |  |   | Client Initials          |   |
|-----|--|---|--------------------------|---|
| #1  | Temperature of container/cooler?                       | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | 15                       | 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 333729**

**for**

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

**Project Manager: Jason Henry**

**14-Inch Vac to Jal - Legacy**

**2009-092**

**03-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**



03-JUN-09

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

Reference: XENCO Report No: **333729**  
**14-Inch Vac to Jal - Legacy**  
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 333729. 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. 333729 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

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

14-Inch Vac to Jal - Legacy

| <b>Sample Id</b> | <b>Matrix</b> | <b>Date Collected</b> | <b>Sample Depth</b> | <b>Lab Sample Id</b> |
|------------------|---------------|-----------------------|---------------------|----------------------|
| T-1 @ 10' bgs    | S             | May-26-09 10:00       |                     | 333729-001           |
| T-2 @ 12' bgs    | S             | May-26-09 10:05       |                     | 333729-002           |
| T-2 @ 14' bgs    | S             | May-26-09 10:10       |                     | 333729-003           |
| T-2 @ 18' bgs    | S             | May-26-09 10:20       |                     | 333729-004           |
| T-3 @ 12' bgs    | S             | May-26-09 10:30       |                     | 333729-005           |
| T-3 @ 14' bgs    | S             | May-26-09 10:40       |                     | 333729-006           |
| T-3 @ 18' bgs    | S             | May-26-09 10:50       |                     | 333729-007           |
| T-3 @ 22' bgs    | S             | May-26-09 11:00       |                     | 333729-008           |
| T-3 @ 26' bgs    | S             | May-26-09 11:10       |                     | 333729-009           |
| T-3 @ 30' bgs    | S             | May-26-09 11:20       |                     | 333729-010           |
| T-4 @ 12' bgs    | S             | May-26-09 11:30       |                     | 333729-011           |
| T-4 @ 14' bgs    | S             | May-26-09 11:40       |                     | 333729-012           |
| T-4 @ 18' bgs    | S             | May-26-09 11:50       |                     | 333729-013           |
| T-4 @ 22' bgs    | S             | May-26-09 12:00       |                     | 333729-014           |
| T-4 @ 26' bgs    | S             | May-26-09 12:10       |                     | 333729-015           |
| T-4 @ 30' bgs    | S             | May-26-09 12:20       |                     | 333729-016           |
| T-5 @ 14' bgs    | S             | May-26-09 12:30       |                     | 333729-017           |
| T-6 @ 10' bgs    | S             | May-26-09 12:40       |                     | 333729-018           |
| T-6 @ 14' bgs    | S             | May-26-09 12:50       |                     | 333729-019           |
| T-6 @ 18' bgs    | S             | May-26-09 13:00       |                     | 333729-020           |
| T-7 @ 10' bgs    | S             | May-26-09 13:10       |                     | 333729-021           |
| T-7 @ 14' bgs    | S             | May-26-09 13:20       |                     | 333729-022           |
| T-7 @ 18' bgs    | S             | May-26-09 13:30       |                     | 333729-023           |
| T-8 @ 10' bgs    | S             | May-26-09 13:40       |                     | 333729-024           |
| T-8 @ 14' bgs    | S             | May-26-09 13:50       |                     | 333729-025           |
| T-9 @ 10' bgs    | S             | May-26-09 14:00       |                     | 333729-026           |
| T-9 @ 14' bgs    | S             | May-26-09 14:10       |                     | 333729-027           |



## CASE NARRATIVE

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

**Project Name:** 14-Inch Vac to Jal - Legacy

**Project ID:** 2009-092

**Work Order Number:** 333729

**Report Date:** 03-JUN-09

**Date Received:** 05/27/2009

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**Sample receipt non conformances and Comments:**

None

---

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

None

**Analytical Non Conformances and Comments:**

Batch: LBA-760246 Percent Moisture

None

Batch: LBA-760247 Percent Moisture

None

Batch: LBA-760705 BTEX-MTBE EPA 8021B

SW8021BM

Batch 760705, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 333729-005,333729-007.

4-Bromofluorobenzene recovered below QC limits. Matrix Interference is suspected. Sample Data confirmed by re-analysis. Samples affected are: 530985-1-BLK,333729-017,333729-010,333729-001. QC data not confirmed by reanalysis.

Batch: LBA-760797 BTEX-MTBE EPA 8021B

SW8021BM

Batch 760797, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 333729-023,333729-021,333729-022.

4-Bromofluorobenzene recovered below QC limits Data confirmed by re-analysis. Samples affected are: 531040-1-BLK,333729-024,333729-019,333729-025. QC data is not confirmed by reanalysis.

SW8021BM

Batch 760797, Ethylbenzene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 333729-025, -026, -021, -022, -019, -023, -020, -024, -027.

The Laboratory Control Sample for Ethylbenzene is within laboratory Control Limits



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: 14-Inch Vac to Jal - Legacy*

*Project ID: 2009-092*

*Work Order Number: 333729*

*Report Date: 03-JUN-09*

*Date Received: 05/27/2009*

---

*Batch: LBA-760837 TPH by SW8015 Mod  
None*

*Batch: LBA-760842 TPH by SW8015 Mod  
None*

*Batch: LBA-760926 BTEX-MTBE EPA 8021B  
SW8021BM*

*Batch 760926, 4-Bromofluorobenzene recovered below QC limits; QC Data not confirmed by re-analysis. Samples affected are: 531104-1-BLK.*

*SW8021BM*

*Batch 760926, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. This failure is most likely due to matrix interference with the sample chosen for MS/MSD analysis.*

*Samples affected are: 333729-016, -011, -013, -003, -002.*

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



# Certificate of Analysis Summary 333729

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14-Inch Vac to Jal - Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed May-27-09 08:34 am


Report Date: 03-JUN-09

Project Manager: Brent Barron, II

| Analysis Requested                 | Lab Id:    | 333729-001      | 333729-002      | 333729-003      | 333729-004      | 333729-005      | 333729-006      |
|------------------------------------|------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                                    | Field Id:  | T-1 @ 10' bgs   | T-2 @ 12' bgs   | T-2 @ 14' bgs   | T-2 @ 18' bgs   | T-3 @ 12' bgs   | T-3 @ 14' bgs   |
|                                    | Depth:     |                 |                 |                 |                 |                 |                 |
|                                    | Matrix:    | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            |
|                                    | Sampled:   | May-26-09 10:00 | May-26-09 10:05 | May-26-09 10:10 | May-26-09 10:20 | May-26-09 10:30 | May-26-09 10:40 |
| BTEX by EPA 8021B                  | Extracted: | May-30-09 11:00 | Jun-01-09 16:30 | Jun-01-09 16:30 | May-30-09 11:00 | May-30-09 11:00 | May-30-09 11:00 |
|                                    | Analyzed:  | May-31-09 16:41 | Jun-02-09 11:41 | Jun-02-09 12:24 | May-31-09 17:03 | May-31-09 19:33 | May-31-09 20:37 |
|                                    | Units/RL:  |                 |                 |                 |                 |                 |                 |
|                                    |            | mg/kg           | RL              | mg/kg           | RL              | mg/kg           | RL              |
| Benzene                            |            | ND 0.0011       | 34.76 5.852     | 18.84 5.886     | 0.0023 0.0011   | 4.046 1.153     | 4.059 1.147     |
| Toluene                            |            | ND 0.0022       | 323.9 11.70     | 223.7 11.77     | 0.0088 0.0023   | 55.43 2.305     | 74.40 2.293     |
| Ethylbenzene                       |            | ND 0.0011       | 189.7 5.852     | 136.1 5.886     | 0.0069 0.0011   | 43.23 1.153     | 58.59 1.147     |
| m,p-Xylenes                        |            | ND 0.0022       | 285.0 11.70     | 206.0 11.77     | 0.0121 0.0023   | 66.87 2.305     | 87.36 2.293     |
| o-Xylene                           |            | ND 0.0011       | 96.74 5.852     | 70.99 5.886     | 0.0052 0.0011   | 23.70 1.153     | 31.03 1.147     |
| Total Xylenes                      |            | ND 0.0011       | 381.74 5.852    | 276.99 5.886    | 0.0173 0.0011   | 90.57 1.153     | 118.39 1.147    |
| Total BTEX                         |            | ND 0.0011       | 930.1 5.852     | 655.63 5.886    | 0.0353 0.0011   | 193.276 1.153   | 255.439 1.147   |
| TPH By SW8015 Mod                  | Extracted: | Jun-01-09 11:07 | Jun-01-09 11:07 | Jun-01-09 11:07 | Jun-01-09 11:07 | Jun-01-09 11:07 | Jun-01-09 11:07 |
|                                    | Analyzed:  | Jun-01-09 14:25 | Jun-01-09 14:50 | Jun-01-09 15:15 | Jun-01-09 15:40 | Jun-01-09 16:05 | Jun-01-09 16:30 |
|                                    | Units/RL:  |                 |                 |                 |                 |                 |                 |
|                                    |            | mg/kg           | RL              | mg/kg           | RL              | mg/kg           | RL              |
| C6-C12 Gasoline Range Hydrocarbons |            | ND 16.4         | 10300 177       | 7000 178        | 22.3 17.3       | 3550 173        | 3980 174        |
| C12-C28 Diesel Range Hydrocarbons  |            | ND 16.4         | 16500 177       | 10500 178       | 109 17.3        | 6450 173        | 7300 174        |
| C28-C35 Oil Range Hydrocarbons     |            | ND 16.4         | 1440 177        | 1050 178        | ND 17.3         | 725 173         | 785 174         |
| Total TPH                          |            | ND 16.4         | 28240 177       | 18550 178       | 131.3 17.3      | 10725 173       | 12065 174       |

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Brent Barron  
Odessa Laboratory Director





**Certificate of Analysis Summary 333729**  
**PLAINS ALL AMERICAN EH&S, Midland, TX**



**Project Id:** 2009-092

**Contact:** Jason Henry

**Project Location:** Lea County, NM

**Project Name:** 14-Inch Vac to Jal - Legacy

**Date Received in Lab:** Wed May-27-09 08:34 am


**Report Date:** 03-JUN-09

**Project Manager:** Brent Barron, II

|                           |                   |                 |                 |                 |                 |                 |                 |
|---------------------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <b>Analysis Requested</b> | <b>Lab Id:</b>    | 333729-001      | 333729-002      | 333729-003      | 333729-004      | 333729-005      | 333729-006      |
|                           | <b>Field Id:</b>  | T-1 @ 10' bgs   | T-2 @ 12' bgs   | T-2 @ 14' bgs   | T-2 @ 18' bgs   | T-3 @ 12' bgs   | T-3 @ 14' bgs   |
|                           | <b>Depth:</b>     |                 |                 |                 |                 |                 |                 |
|                           | <b>Matrix:</b>    | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            |
| <b>Percent Moisture</b>   | <b>Sampled:</b>   | May-26-09 10:00 | May-26-09 10:05 | May-26-09 10:10 | May-26-09 10:20 | May-26-09 10:30 | May-26-09 10:40 |
|                           | <b>Extracted:</b> |                 |                 |                 |                 |                 |                 |
|                           | <b>Analyzed:</b>  | May-28-09 08:46 | May-28-09 08:46 | May-28-09 08:46 | May-28-09 08:46 | May-28-09 08:46 | May-28-09 08:46 |
|                           | <b>Units/RL:</b>  | % RL            | % RL            | % RL            | % RL            | % RL            | % RL            |
| <b>Percent Moisture</b>   |                   | 8.71 1.00       | 15.24 1.00      | 15.73 1.00      | 13.23 1.00      | 13.24 1.00      | 13.66 1.00      |

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# Certificate of Analysis Summary 333729

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14-Inch Vac to Jal - Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed May-27-09 08:34 am


Report Date: 03-JUN-09

Project Manager: Brent Barron, II

| Analysis Requested                 | Lab Id:    | 333729-007      |       | 333729-008      |        | 333729-009      |        | 333729-010      |       | 333729-011      |       | 333729-012      |       |
|------------------------------------|------------|-----------------|-------|-----------------|--------|-----------------|--------|-----------------|-------|-----------------|-------|-----------------|-------|
|                                    | Field Id:  | T-3 @ 18' bgs   |       | T-3 @ 22' bgs   |        | T-3 @ 26' bgs   |        | T-3 @ 30' bgs   |       | T-4 @ 12' bgs   |       | T-4 @ 14' bgs   |       |
|                                    | Depth:     |                 |       |                 |        |                 |        |                 |       |                 |       |                 |       |
|                                    | Matrix:    | SOIL            |       | SOIL            |        | SOIL            |        | SOIL            |       | SOIL            |       | SOIL            |       |
|                                    | Sampled:   | May-26-09 10:50 |       | May-26-09 11:00 |        | May-26-09 11:10 |        | May-26-09 11:20 |       | May-26-09 11:30 |       | May-26-09 11:40 |       |
| BTEX by EPA 8021B                  | Extracted: | May-30-09 11:00 |       | May-30-09 11:00 |        | May-30-09 11:00 |        | May-30-09 11:00 |       | Jun-01-09 16:30 |       | May-30-09 11:00 |       |
|                                    | Analyzed:  | May-31-09 20:59 |       | May-31-09 17:24 |        | May-31-09 18:28 |        | May-31-09 21:20 |       | Jun-02-09 12:46 |       | May-31-09 22:03 |       |
|                                    | Units/RL:  | mg/kg           | RL    | mg/kg           | RL     | mg/kg           | RL     | mg/kg           | RL    | mg/kg           | RL    | mg/kg           | RL    |
| Benzene                            |            | 11.28           | 1.141 | 0.0070          | 0.0012 | ND              | 0.1194 | ND              | 1.073 | 48.18           | 6.038 | 8.783           | 1.280 |
| Toluene                            |            | 83.91           | 2.283 | 0.0250          | 0.0025 | 0.6279          | 0.2388 | 2.587           | 2.147 | 400.1           | 12.08 | 102.0           | 2.561 |
| Ethylbenzene                       |            | 48.65           | 1.141 | 0.0085          | 0.0012 | 1.565           | 0.1194 | 3.671           | 1.073 | 211.1           | 6.038 | 63.40           | 1.280 |
| m,p-Xylenes                        |            | 73.01           | 2.283 | 0.0110          | 0.0025 | 4.657           | 0.2388 | 6.086           | 2.147 | 327.2           | 12.08 | 96.00           | 2.561 |
| o-Xylene                           |            | 24.87           | 1.141 | 0.0053          | 0.0012 | 2.401           | 0.1194 | 2.512           | 1.073 | 111.0           | 6.038 | 33.74           | 1.280 |
| Total Xylenes                      |            | 97.88           | 1.141 | 0.0163          | 0.0012 | 7.058           | 0.1194 | 8.598           | 1.073 | 438.2           | 6.038 | 129.74          | 1.280 |
| Total BTEX                         |            | 241.72          | 1.141 | 0.0568          | 0.0012 | 9.2509          | 0.1194 | 14.856          | 1.073 | 1097.58         | 6.038 | 303.923         | 1.280 |
| TPH By SW8015 Mod                  | Extracted: | Jun-01-09 11:07 |       | Jun-01-09 11:07 |        | Jun-01-09 11:07 |        | Jun-01-09 11:07 |       | Jun-01-09 11:07 |       | Jun-01-09 11:07 |       |
|                                    | Analyzed:  | Jun-01-09 16:55 |       | Jun-01-09 17:20 |        | Jun-01-09 17:45 |        | Jun-01-09 18:10 |       | Jun-01-09 19:00 |       | Jun-01-09 19:24 |       |
|                                    | Units/RL:  | mg/kg           | RL    | mg/kg           | RL     | mg/kg           | RL     | mg/kg           | RL    | mg/kg           | RL    | mg/kg           | RL    |
| C6-C12 Gasoline Range Hydrocarbons |            | 5930            | 171   | ND              | 18.5   | 289             | 18.2   | 420             | 16.2  | 13200           | 364   | 3100            | 193   |
| C12-C28 Diesel Range Hydrocarbons  |            | 11100           | 171   | 59.0            | 18.5   | 910             | 18.2   | 1400            | 16.2  | 22300           | 364   | 4600            | 193   |
| C28-C35 Oil Range Hydrocarbons     |            | 1080            | 171   | ND              | 18.5   | 81.9            | 18.2   | 118             | 16.2  | 2050            | 364   | 524             | 193   |
| Total TPH                          |            | 18110           | 171   | 59              | 18.5   | 1280.9          | 18.2   | 1938            | 16.2  | 37550           | 364   | 8224            | 193   |

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Odessa Laboratory Director



# Certificate of Analysis Summary 333729

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



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14-Inch Vac to Jal - Legacy

Date Received in Lab: Wed May-27-09 08:34 am

Report Date: 03-JUN-09

Project Manager: Brent Barron, IL

|                           |                   |                 |                 |                 |                 |                 |                 |
|---------------------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <b>Analysis Requested</b> | <b>Lab Id:</b>    | 333729-007      | 333729-008      | 333729-009      | 333729-010      | 333729-011      | 333729-012      |
|                           | <b>Field Id:</b>  | T-3 @ 18' bgs   | T-3 @ 22' bgs   | T-3 @ 26' bgs   | T-3 @ 30' bgs   | T-4 @ 12' bgs   | T-4 @ 14' bgs   |
|                           | <b>Depth:</b>     |                 |                 |                 |                 |                 |                 |
|                           | <b>Matrix:</b>    | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            |
| <b>Percent Moisture</b>   | <b>Sampled:</b>   | May-26-09 10:50 | May-26-09 11:00 | May-26-09 11:10 | May-26-09 11:20 | May-26-09 11:30 | May-26-09 11:40 |
|                           | <b>Extracted:</b> |                 |                 |                 |                 |                 |                 |
|                           | <b>Analyzed:</b>  | May-28-09 08:46 | May-28-09 08:46 | May-28-09 08:46 | May-28-09 08:46 | May-28-09 08:46 | May-28-09 08:46 |
|                           | <b>Units/RL:</b>  | % RL            | % RL            | % RL            | % RL            | % RL            | % RL            |
| Percent Moisture          |                   | 12.39 1.00      | 19.12 1.00      | 17.55 1.00      | 7.39 1.00       | 17.52 1.00      | 22.36 1.00      |

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Brent Barron  
Odessa Laboratory Director



# Certificate of Analysis Summary 333729

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14-Inch Vac to Jal - Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed May-27-09 08:34 am


Report Date: 03-JUN-09

Project Manager: Brent Barron, II

| Analysis Requested                 |  | Lab Id:    | 333729-013      |       | 333729-014      |       | 333729-015      |       | 333729-016      |       | 333729-017      |        | 333729-018      |       |
|------------------------------------|--|------------|-----------------|-------|-----------------|-------|-----------------|-------|-----------------|-------|-----------------|--------|-----------------|-------|
|                                    |  | Field Id:  | T-4 @ 18' bgs   |       | T-4 @ 22' bgs   |       | T-4 @ 26' bgs   |       | T-4 @ 30' bgs   |       | T-5 @ 14' bgs   |        | T-6 @ 10' bgs   |       |
|                                    |  | Depth:     |                 |       |                 |       |                 |       |                 |       |                 |        |                 |       |
|                                    |  | Matrix:    | SOIL            |       | SOIL            |       | SOIL            |       | SOIL            |       | SOIL            |        | SOIL            |       |
|                                    |  | Sampled:   | May-26-09 11:50 |       | May-26-09 12:00 |       | May-26-09 12:10 |       | May-26-09 12:20 |       | May-26-09 12:30 |        | May-26-09 12 40 |       |
| BTEX by EPA 8021B                  |  | Extracted: | Jun-01-09 16:30 |       | May-30-09 11:00 |       | May-30-09 11 00 |       | Jun-01-09 16 30 |       | May-30-09 11:00 |        | May-30-09 11 00 |       |
|                                    |  | Analyzed:  | Jun-02-09 13:08 |       | May-31-09 22:46 |       | May-31-09 23:07 |       | Jun-02-09 13:50 |       | May-31-09 17:46 |        | May-31-09 23:50 |       |
|                                    |  | Units/RL:  |                 |       |                 |       |                 |       |                 |       |                 |        |                 |       |
|                                    |  |            | mg/kg           | RL    | mg/kg           | RL    | mg/kg           | RL    | mg/kg           | RL    | mg/kg           | RL     | mg/kg           | RL    |
| Benzene                            |  |            | 29.02           | 6.241 | 20.63           | 1.178 | 31.62           | 1.129 | 23.12           | 5.694 | 0.0078          | 0.0012 | 1.999           | 1.234 |
| Toluene                            |  |            | 277.2           | 12.48 | 163.3           | 2.356 | 213.1           | 2.258 | 250.2           | 11.39 | 0.0041          | 0.0025 | 20.67           | 2.468 |
| Ethylbenzene                       |  |            | 142.5           | 6.241 | 80.59           | 1.178 | 111.0           | 1.129 | 143.0           | 5.694 | ND              | 0.0012 | 21.20           | 1.234 |
| m,p-Xylenes                        |  |            | 215.4           | 12.48 | 111.1           | 2.356 | 158.5           | 2.258 | 214.8           | 11.39 | ND              | 0.0025 | 32.80           | 2.468 |
| o-Xylene                           |  |            | 73.52           | 6.241 | 39.38           | 1.178 | 55.50           | 1.129 | 74.02           | 5.694 | ND              | 0.0012 | 12.43           | 1.234 |
| Total Xylenes                      |  |            | 288.92          | 6.241 | 150.48          | 1.178 | 214             | 1.129 | 288.82          | 5.694 | ND              | 0.0012 | 45.23           | 1.234 |
| Total BTEX                         |  |            | 737.64          | 6.241 | 415             | 1.178 | 569.72          | 1.129 | 705.14          | 5.694 | 0.0119          | 0.0012 | 89.099          | 1.234 |
| TPH By SW8015 Mod                  |  | Extracted: | Jun-01-09 11:07 |       | Jun-01-09 11:07 |       | Jun-01-09 11:07 |       | Jun-01-09 11:07 |       | Jun-01-09 11:07 |        | Jun-01-09 11:07 |       |
|                                    |  | Analyzed:  | Jun-01-09 19:49 |       | Jun-01-09 20:14 |       | Jun-01-09 20:39 |       | Jun-01-09 21:04 |       | Jun-01-09 21 28 |        | Jun-01-09 21:53 |       |
|                                    |  | Units/RL:  |                 |       |                 |       |                 |       |                 |       |                 |        |                 |       |
|                                    |  |            | mg/kg           | RL    | mg/kg           | RL    | mg/kg           | RL    | mg/kg           | RL    | mg/kg           | RL     | mg/kg           | RL    |
| C6-C12 Gasoline Range Hydrocarbons |  |            | 9680            | 188   | 8240            | 177   | 5040            | 170   | 7750            | 343   | ND              | 18.6   | 1080            | 92.6  |
| C12-C28 Diesel Range Hydrocarbons  |  |            | 14200           | 188   | 13700           | 177   | 7900            | 170   | 11000           | 343   | 32.0            | 18.6   | 2620            | 92.6  |
| C28-C35 Oil Range Hydrocarbons     |  |            | 1340            | 188   | 1130            | 177   | 853             | 170   | 1290            | 343   | ND              | 18.6   | 296             | 92.6  |
| Total TPH                          |  |            | 25220           | 188   | 23070           | 177   | 13793           | 170   | 20040           | 343   | 32              | 18.6   | 3996            | 92.6  |

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Brent Barron  
Odessa Laboratory Director



# Certificate of Analysis Summary 333729

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



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14-Inch Vac to Jal - Legacy

Date Received in Lab: Wed May-27-09 08:34 am


Report Date: 03-JUN-09

Project Manager: Brent Barron, II

|                           |                   |                 |                 |                 |                 |                 |                 |
|---------------------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <b>Analysis Requested</b> | <b>Lab Id:</b>    | 333729-013      | 333729-014      | 333729-015      | 333729-016      | 333729-017      | 333729-018      |
|                           | <b>Field Id:</b>  | T-4 @ 18' bgs   | T-4 @ 22' bgs   | T-4 @ 26' bgs   | T-4 @ 30' bgs   | T-5 @ 14' bgs   | T-6 @ 10' bgs   |
|                           | <b>Depth:</b>     |                 |                 |                 |                 |                 |                 |
|                           | <b>Matrix:</b>    | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            |
|                           | <b>Sampled:</b>   | May-26-09 11:50 | May-26-09 12:00 | May-26-09 12:10 | May-26-09 12:20 | May-26-09 12:30 | May-26-09 12:40 |
| <b>Percent Moisture</b>   | <b>Extracted:</b> |                 |                 |                 |                 |                 |                 |
|                           | <b>Analyzed:</b>  | May-28-09 08:46 | May-28-09 08:46 | May-28-09 08:46 | May-28-09 08:46 | May-28-09 08:46 | May-28-09 08:46 |
|                           | <b>Units/RL:</b>  | % RL            | % RL            | % RL            | % RL            | % RL            | % RL            |
| Percent Moisture          |                   | 20.20 1.00      | 15.11 1.00      | 11.76 1.00      | 12.54 1.00      | 19.36 1.00      | 18.97 1.00      |

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Brent Barron  
Odessa Laboratory Director



# Certificate of Analysis Summary 333729

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14-Inch Vac to Jal - Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed May-27-09 08:34 am


Report Date: 03-JUN-09

Project Manager: Brent Barron, II

| <i>Analysis Requested</i>          | <i>Lab Id:</i>    | 333729-019      | 333729-020      | 333729-021      | 333729-022      | 333729-023      | 333729-024      |
|------------------------------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                                    | <i>Field Id:</i>  | T-6 @ 14' bgs   | T-6 @ 18' bgs   | T-7 @ 10' bgs   | T-7 @ 14' bgs   | T-7 @ 18' bgs   | T-8 @ 10' bgs   |
|                                    | <i>Depth:</i>     |                 |                 |                 |                 |                 |                 |
|                                    | <i>Matrix:</i>    | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            |
|                                    | <i>Sampled:</i>   | May-26-09 12:50 | May-26-09 13:00 | May-26-09 13:10 | May-26-09 13:20 | May-26-09 13:30 | May-26-09 13:40 |
| <b>BTEX by EPA 8021B</b>           | <i>Extracted:</i> | Jun-01-09 08:00 | Jun-01-09 08:00 | Jun-01-09 08:00 | Jun-01-09 08:00 | Jun-01-09 08:00 | Jun-01-09 08:00 |
|                                    | <i>Analyzed:</i>  | Jun-01-09 10:55 | Jun-01-09 11:17 | Jun-01-09 13:04 | Jun-01-09 13:25 | Jun-01-09 13:47 | Jun-01-09 11:38 |
|                                    | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |
| Benzene                            |                   | 0.0013 0.0013   | ND 0.0012       | 9.257 1.137     | 5.998 1.190     | ND 1.200        | ND 0.0011       |
| Toluene                            |                   | 0.0053 0.0025   | 0.0042 0.0024   | 56.21 2.274     | 62.42 2.380     | 33.32 2.400     | ND 0.0023       |
| Ethylbenzene                       |                   | 0.0015 0.0013   | 0.0018 0.0012   | 35.25 1.137     | 46.94 1.190     | 37.70 1.200     | ND 0.0011       |
| m,p-Xylenes                        |                   | ND 0.0025       | ND 0.0024       | 54.67 2.274     | 71.87 2.380     | 59.77 2.400     | ND 0.0023       |
| o-Xylene                           |                   | ND 0.0013       | ND 0.0012       | 19.97 1.137     | 25.59 1.190     | 22.55 1.200     | ND 0.0011       |
| Total Xylenes                      |                   | ND 0.0013       | ND 0.0012       | 74.64 1.137     | 97.46 1.190     | 82.32 1.200     | ND 0.0011       |
| Total BTEX                         |                   | 0.0081 0.0013   | 0.006 0.0012    | 175.357 1.137   | 212.818 1.190   | 153.34 1.200    | ND 0.0011       |
| <b>TPH By SW8015 Mod</b>           | <i>Extracted:</i> | Jun-01-09 11:07 | Jun-01-09 11:07 | Jun-01-09 12:14 | Jun-01-09 12:14 | Jun-01-09 12:14 | Jun-01-09 12:14 |
|                                    | <i>Analyzed:</i>  | Jun-01-09 22:18 | Jun-01-09 22:43 | Jun-01-09 13:33 | Jun-01-09 13:56 | Jun-01-09 14:20 | Jun-01-09 14:43 |
|                                    | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |
| C6-C12 Gasoline Range Hydrocarbons |                   | ND 18.9         | ND 18.3         | 3460 344        | 3170 360        | 3190 360        | ND 17.0         |
| C12-C28 Diesel Range Hydrocarbons  |                   | 28.3 18.9       | 66.6 18.3       | 5480 344        | 5270 360        | 5010 360        | 47.4 17.0       |
| C28-C35 Oil Range Hydrocarbons     |                   | ND 18.9         | ND 18.3         | 900 344         | 799 360         | 861 360         | 44.3 17.0       |
| Total TPH                          |                   | 28.3 18.9       | 66.6 18.3       | 9840 344        | 9239 360        | 9061 360        | 91.7 17.0       |

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Brent Barron  
Odessa Laboratory Director



**Certificate of Analysis Summary 333729**  
**PLAINS ALL AMERICAN EH&S, Midland, TX**



**Project Id:** 2009-092

**Contact:** Jason Henry

**Project Location:** Lea County, NM

**Project Name:** 14-Inch Vac to Jal - Legacy

**Date Received in Lab:** Wed May-27-09 08:34 am


**Report Date:** 03-JUN-09

**Project Manager:** Brent Barron, II

|                           |                   |                 |                 |                 |                 |                 |                 |
|---------------------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <b>Analysis Requested</b> | <b>Lab Id:</b>    | 333729-019      | 333729-020      | 333729-021      | 333729-022      | 333729-023      | 333729-024      |
|                           | <b>Field Id:</b>  | T-6 @ 14' bgs   | T-6 @ 18' bgs   | T-7 @ 10' bgs   | T-7 @ 14' bgs   | T-7 @ 18' bgs   | T-8 @ 10' bgs   |
|                           | <b>Depth:</b>     |                 |                 |                 |                 |                 |                 |
|                           | <b>Matrix:</b>    | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            |
|                           | <b>Sampled:</b>   | May-26-09 12:50 | May-26-09 13:00 | May-26-09 13:10 | May-26-09 13:20 | May-26-09 13:30 | May-26-09 13:40 |
| <b>Percent Moisture</b>   | <b>Extracted:</b> |                 |                 |                 |                 |                 |                 |
|                           | <b>Analyzed:</b>  | May-28-09 08:46 | May-28-09 08:46 | May-28-09 08:54 | May-28-09 08:54 | May-28-09 08:54 | May-28-09 08:54 |
|                           | <b>Units/RL:</b>  | % RL            | % RL            | % RL            | % RL            | % RL            | % RL            |
| Percent Moisture          |                   | 20.72 1.00      | 18.18 1.00      | 12.76 1.00      | 16.64 1.00      | 16.68 1.00      | 11.94 1.00      |

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Odessa Laboratory Director



# Certificate of Analysis Summary 333729

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14-Inch Vac to Jal - Legacy

Date Received in Lab: Wed May-27-09 08:34 am


Report Date: 03-JUN-09

Project Manager: Brent Barron, II

| Analysis Requested                 | Lab Id:    | 333729-025      | 333729-026      | 333729-027      |  |  |  |
|------------------------------------|------------|-----------------|-----------------|-----------------|--|--|--|
|                                    | Field Id:  | T-8 @ 14' bgs   | T-9 @ 10' bgs   | T-9 @ 14' bgs   |  |  |  |
|                                    | Depth:     |                 |                 |                 |  |  |  |
|                                    | Matrix:    | SOIL            | SOIL            | SOIL            |  |  |  |
|                                    | Sampled:   | May-26-09 13 50 | May-26-09 14:00 | May-26-09 14 10 |  |  |  |
| BTEX by EPA 8021B                  | Extracted: | Jun-01-09 08:00 | Jun-01-09 08:00 | Jun-01-09 08:00 |  |  |  |
|                                    | Analyzed:  | Jun-01-09 11:59 | Jun-01-09 12:43 | Jun-01-09 12:21 |  |  |  |
|                                    | Units/RL:  | mg/kg RL        | mg/kg RL        | mg/kg RL        |  |  |  |
|                                    |            |                 |                 |                 |  |  |  |
| Benzene                            |            | ND 0 0012       | 0.0072 0.0011   | 0.0062 0 0012   |  |  |  |
| Toluene                            |            | ND 0 0023       | 0.3247 0.0021   | ND 0 0023       |  |  |  |
| Ethylbenzene                       |            | ND 0 0012       | 0.2975 0.0011   | 0.0018 0 0012   |  |  |  |
| m,p-Xylenes                        |            | ND 0 0023       | 0.4625 0.0021   | 0 0097 0.0023   |  |  |  |
| o-Xylene                           |            | ND 0 0012       | 0.2470 0.0011   | 0.0072 0.0012   |  |  |  |
| Total Xylenes                      |            | ND 0 0012       | 0.7095 0.0011   | 0.0169 0.0012   |  |  |  |
| Total BTEX                         |            | ND 0 0012       | 1.3389 0.0011   | 0.0249 0.0012   |  |  |  |
| TPH By SW8015 Mod                  | Extracted: | Jun-01-09 12:14 | Jun-01-09 12:14 | Jun-01-09 12:14 |  |  |  |
|                                    | Analyzed:  | Jun-01-09 15 06 | Jun-01-09 15:29 | Jun-01-09 15:52 |  |  |  |
|                                    | Units/RL:  | mg/kg RL        | mg/kg RL        | mg/kg RL        |  |  |  |
|                                    |            |                 |                 |                 |  |  |  |
| C6-C12 Gasoline Range Hydrocarbons |            | ND 17.4         | 383 160         | ND 17.6         |  |  |  |
| C12-C28 Diesel Range Hydrocarbons  |            | ND 17.4         | 3720 160        | 69.7 17.6       |  |  |  |
| C28-C35 Oil Range Hydrocarbons     |            | ND 17.4         | 648 160         | 36.3 17.6       |  |  |  |
| Total TPH                          |            | ND 17.4         | 4751 160        | 106 17.6        |  |  |  |

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Brent Barron  
Odessa Laboratory Director





**Certificate of Analysis Summary 333729**  
**PLAINS ALL AMERICAN EH&S, Midland, TX**



**Project Id:** 2009-092

**Contact:** Jason Henry

**Project Location:** Lea County, NM

**Project Name:** 14-Inch Vac to Jal - Legacy

**Date Received in Lab:** Wed May-27-09 08:34 am


**Report Date:** 03-JUN-09

**Project Manager:** Brent Barron, II

|                           |                   |                 |                 |                 |  |  |  |
|---------------------------|-------------------|-----------------|-----------------|-----------------|--|--|--|
| <b>Analysis Requested</b> | <b>Lab Id:</b>    | 333729-025      | 333729-026      | 333729-027      |  |  |  |
|                           | <b>Field Id:</b>  | T-8 @ 14' bgs   | T-9 @ 10' bgs   | T-9 @ 14' bgs   |  |  |  |
|                           | <b>Depth:</b>     |                 |                 |                 |  |  |  |
|                           | <b>Matrix:</b>    | SOIL            | SOIL            | SOIL            |  |  |  |
| <b>Percent Moisture</b>   | <b>Sampled:</b>   | May-26-09 13:50 | May-26-09 14:00 | May-26-09 14:10 |  |  |  |
|                           | <b>Extracted:</b> |                 |                 |                 |  |  |  |
|                           | <b>Analyzed:</b>  | May-28-09 08:54 | May-28-09 08:54 | May-28-09 08:54 |  |  |  |
|                           | <b>Units/RL:</b>  | % RL            | % RL            | % RL            |  |  |  |
| <b>Percent Moisture</b>   |                   | 13.92 1.00      | 6.37 1.00       | 14.57 1.00      |  |  |  |

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- 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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| 842 Cantwell Lane, Corpus Christi, TX 78408 | (361) 884-0371 | (361) 884-9116 |



## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Lab Batch #: 760705

Sample: 530985-1-BKS / BKS

Project ID: 2009-092

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/31/09 14:54

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0323           | 0.0300          | 108             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0264           | 0.0300          | 88              | 80-120            |       |

Lab Batch #: 760705

Sample: 530985-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/31/09 15:15

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0324           | 0.0300          | 108             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0269           | 0.0300          | 90              | 80-120            |       |

Lab Batch #: 760705

Sample: 530985-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/31/09 15:58

### 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 | 0.0195           | 0.0300          | 65              | 80-120            | *     |

Lab Batch #: 760705

Sample: 333729-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 16:41

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0277           | 0.0300          | 92              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0189           | 0.0300          | 63              | 80-120            | **    |

Lab Batch #: 760705

Sample: 333729-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 17:03

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0253           | 0.0300          | 84              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0289           | 0.0300          | 96              | 80-120            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

All results are based on MDL and validated for QC purposes

# Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Project ID: 2009-092

Lab Batch #: 760705

Sample: 333729-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 17:24

## 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 | 0.0251           | 0.0300          | 84              | 80-120            |       |

Lab Batch #: 760705

Sample: 333729-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 17:46

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0270           | 0.0300          | 90              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0224           | 0.0300          | 75              | 80-120            | **    |

Lab Batch #: 760705

Sample: 333729-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 18:28

## 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 | 0.0455           | 0.0300          | 152             | 80-120            | **    |

Lab Batch #: 760705

Sample: 333729-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 19:33

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0238           | 0.0300          | 79              | 80-120            | **    |
| 4-Bromofluorobenzene | 0.0276           | 0.0300          | 92              | 80-120            |       |

Lab Batch #: 760705

Sample: 333729-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 20:37

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0242           | 0.0300          | 81              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0280           | 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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Lab Batch #: 760705

Sample: 333729-007 / SMP

Project ID: 2009-092

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 20:59

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0233           | 0.0300          | 78              | 80-120            | **    |
| 4-Bromofluorobenzene | 0.0264           | 0.0300          | 88              | 80-120            |       |

Lab Batch #: 760705

Sample: 333729-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 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  | 0.0262           | 0.0300          | 87              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0231           | 0.0300          | 77              | 80-120            | **    |

Lab Batch #: 760705

Sample: 333729-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 22:03

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0249           | 0.0300          | 83              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0274           | 0.0300          | 91              | 80-120            |       |

Lab Batch #: 760705

Sample: 333729-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 22:46

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0243           | 0.0300          | 81              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0264           | 0.0300          | 88              | 80-120            |       |

Lab Batch #: 760705

Sample: 333729-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 23:07

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0256           | 0.0300          | 85              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0297           | 0.0300          | 99              | 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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Project ID: 2009-092

Lab Batch #: 760705

Sample: 333729-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/09 23:50

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0252           | 0.0300          | 84              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0273           | 0.0300          | 91              | 80-120            |       |

Lab Batch #: 760705

Sample: 333729-004 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 00:12

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0297           | 0.0300          | 99              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0274           | 0.0300          | 91              | 80-120            |       |

Lab Batch #: 760705

Sample: 333729-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 00:33

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0307           | 0.0300          | 102             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0272           | 0.0300          | 91              | 80-120            |       |

Lab Batch #: 760797

Sample: 531040-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 09:29

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0323           | 0.0300          | 108             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0267           | 0.0300          | 89              | 80-120            |       |

Lab Batch #: 760797

Sample: 531040-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 09:51

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0324           | 0.0300          | 108             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0267           | 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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Project ID: 2009-092

Lab Batch #: 760797

Sample: 531040-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 10:34

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0276           | 0.0300          | 92              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0220           | 0.0300          | 73              | 80-120            | *     |

Lab Batch #: 760797

Sample: 333729-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 10:55

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0267           | 0.0300          | 89              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0208           | 0.0300          | 69              | 80-120            | **    |

Lab Batch #: 760797

Sample: 333729-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 11:17

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0274           | 0.0300          | 91              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0255           | 0.0300          | 85              | 80-120            |       |

Lab Batch #: 760797

Sample: 333729-024 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 11:38

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0244           | 0.0300          | 81              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0205           | 0.0300          | 68              | 80-120            | **    |

Lab Batch #: 760797

Sample: 333729-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 11:59

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0276           | 0.0300          | 92              | 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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Project ID: 2009-092

Lab Batch #: 760797

Sample: 333729-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 12:21

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0255           | 0.0300          | 85              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0296           | 0.0300          | 99              | 80-120            |       |

Lab Batch #: 760797

Sample: 333729-026 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 12:43

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0327           | 0.0300          | 109             | 80-120            |       |
| 4-Bromofluorobenzene | 0.1156           | 0.0300          | 385             | 80-120            | **    |

Lab Batch #: 760797

Sample: 333729-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 13:04

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0238           | 0.0300          | 79              | 80-120            | **    |
| 4-Bromofluorobenzene | 0.0283           | 0.0300          | 94              | 80-120            |       |

Lab Batch #: 760797

Sample: 333729-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 13:25

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0232           | 0.0300          | 77              | 80-120            | **    |
| 4-Bromofluorobenzene | 0.0288           | 0.0300          | 96              | 80-120            |       |

Lab Batch #: 760797

Sample: 333729-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 13:47

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0227           | 0.0300          | 76              | 80-120            | **    |
| 4-Bromofluorobenzene | 0.0294           | 0.0300          | 98              | 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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Project ID: 2009-092

Lab Batch #: 760797

Sample: 333729-025 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 19:04

## 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 | 0.0281           | 0.0300          | 94              | 80-120            |       |

Lab Batch #: 760797

Sample: 333729-025 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 19:26

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0315           | 0.0300          | 105             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0271           | 0.0300          | 90              | 80-120            |       |

Lab Batch #: 760926

Sample: 531104-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/02/09 09:31

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0322           | 0.0300          | 107             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0267           | 0.0300          | 89              | 80-120            |       |

Lab Batch #: 760926

Sample: 531104-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/02/09 09:52

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0321           | 0.0300          | 107             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0272           | 0.0300          | 91              | 80-120            |       |

Lab Batch #: 760926

Sample: 531104-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/02/09 10:37

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0277           | 0.0300          | 92              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0192           | 0.0300          | 64              | 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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Project ID: 2009-092

Lab Batch #: 760926

Sample: 333729-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 11:41

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0245           | 0.0300          | 82              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0261           | 0.0300          | 87              | 80-120            |       |

Lab Batch #: 760926

Sample: 333729-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 12:24

### 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 | 0.0271           | 0.0300          | 90              | 80-120            |       |

Lab Batch #: 760926

Sample: 333729-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 12:46

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0251           | 0.0300          | 84              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0279           | 0.0300          | 93              | 80-120            |       |

Lab Batch #: 760926

Sample: 333729-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 13:08

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0257           | 0.0300          | 86              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0264           | 0.0300          | 88              | 80-120            |       |

Lab Batch #: 760926

Sample: 333729-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 13:50

### 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 | 0.0286           | 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: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Lab Batch #: 760926

Sample: 334047-004 S / MS

Project ID: 2009-092

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 14:12

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0289           | 0.0300          | 96              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0425           | 0.0300          | 142             | 80-120            | *     |

Lab Batch #: 760926

Sample: 334047-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 14:33

### 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 | 0.0448           | 0.0300          | 149             | 80-120            | *     |

Lab Batch #: 760837

Sample: 531068-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 12:23

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 105              | 100             | 105             | 70-135            |       |
| o-Terphenyl       | 42.0             | 50.0            | 84              | 70-135            |       |

Lab Batch #: 760837

Sample: 531068-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 12:46

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 106              | 100             | 106             | 70-135            |       |
| o-Terphenyl       | 42.8             | 50.0            | 86              | 70-135            |       |

Lab Batch #: 760837

Sample: 531068-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 13:10

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 92.3             | 100             | 92              | 70-135            |       |
| o-Terphenyl       | 47.0             | 50.0            | 94              | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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

## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Project ID: 2009-092

Lab Batch #: 760837

Sample: 333729-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 13:33

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane                | 122              | 100             | 122             | 70-135            |       |
| o-Terphenyl                   | 55.4             | 50.0            | 111             | 70-135            |       |

Lab Batch #: 760837

Sample: 333729-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 13:56

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane                | 128              | 100             | 128             | 70-135            |       |
| o-Terphenyl                   | 53.0             | 50.0            | 106             | 70-135            |       |

Lab Batch #: 760837

Sample: 333729-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 14:20

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane                | 124              | 100             | 124             | 70-135            |       |
| o-Terphenyl                   | 49.8             | 50.0            | 100             | 70-135            |       |

Lab Batch #: 760837

Sample: 333729-024 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 14:43

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane                | 92.8             | 100             | 93              | 70-135            |       |
| o-Terphenyl                   | 49.5             | 50.0            | 99              | 70-135            |       |

Lab Batch #: 760837

Sample: 333729-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 15:06

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane                | 93.4             | 100             | 93              | 70-135            |       |
| o-Terphenyl                   | 48.7             | 50.0            | 97              | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Lab Batch #: 760837

Sample: 333729-026 / SMP

Project ID: 2009-092

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 15:29

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 102              | 100             | 102             | 70-135            |       |
| o-Terphenyl       | 51.8             | 50.0            | 104             | 70-135            |       |

Lab Batch #: 760837

Sample: 333729-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 15:52

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 95.1             | 100             | 95              | 70-135            |       |
| o-Terphenyl       | 49.6             | 50.0            | 99              | 70-135            |       |

Lab Batch #: 760837

Sample: 333729-027 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 21:35

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 113              | 100             | 113             | 70-135            |       |
| o-Terphenyl       | 47.5             | 50.0            | 95              | 70-135            |       |

Lab Batch #: 760837

Sample: 333729-027 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 21:58

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 117              | 100             | 117             | 70-135            |       |
| o-Terphenyl       | 49.1             | 50.0            | 98              | 70-135            |       |

Lab Batch #: 760842

Sample: 531073-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 13:10

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 105              | 100             | 105             | 70-135            |       |
| o-Terphenyl       | 44.7             | 50.0            | 89              | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Project ID: 2009-092

Lab Batch #: 760842

Sample: 531073-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 13:35

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 105              | 100             | 105             | 70-135            |       |
| o-Terphenyl       | 44.8             | 50.0            | 90              | 70-135            |       |

Lab Batch #: 760842

Sample: 531073-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 14:00

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 90.4             | 100             | 90              | 70-135            |       |
| o-Terphenyl       | 48.4             | 50.0            | 97              | 70-135            |       |

Lab Batch #: 760842

Sample: 333729-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 14:25

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 91.8             | 100             | 92              | 70-135            |       |
| o-Terphenyl       | 49.3             | 50.0            | 99              | 70-135            |       |

Lab Batch #: 760842

Sample: 333729-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 14:50

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 85.0             | 100             | 85              | 70-135            |       |
| o-Terphenyl       | 55.2             | 50.0            | 110             | 70-135            |       |

Lab Batch #: 760842

Sample: 333729-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 15:15

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 116              | 100             | 116             | 70-135            |       |
| o-Terphenyl       | 53.4             | 50.0            | 107             | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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

## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Project ID: 2009-092

Lab Batch #: 760842

Sample: 333729-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 15:40

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 93.8                | 100                | 94                    | 70-135               |       |
| o-Terphenyl                   | 50.3                | 50.0               | 101                   | 70-135               |       |

Lab Batch #: 760842

Sample: 333729-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 16:05

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 124                 | 100                | 124                   | 70-135               |       |
| o-Terphenyl                   | 47.4                | 50.0               | 95                    | 70-135               |       |

Lab Batch #: 760842

Sample: 333729-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 16:30

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 129                 | 100                | 129                   | 70-135               |       |
| o-Terphenyl                   | 51.1                | 50.0               | 102                   | 70-135               |       |

Lab Batch #: 760842

Sample: 333729-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 16:55

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 122                 | 100                | 122                   | 70-135               |       |
| o-Terphenyl                   | 50.2                | 50.0               | 100                   | 70-135               |       |

Lab Batch #: 760842

Sample: 333729-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 17:20

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 97.1                | 100                | 97                    | 70-135               |       |
| o-Terphenyl                   | 52.1                | 50.0               | 104                   | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Project ID: 2009-092

Lab Batch #: 760842

Sample: 333729-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 17:45

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 102                 | 100                | 102                   | 70-135               |       |
| o-Terphenyl                   | 52.3                | 50.0               | 105                   | 70-135               |       |

Lab Batch #: 760842

Sample: 333729-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 18:10

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 96.4                | 100                | 96                    | 70-135               |       |
| o-Terphenyl                   | 48.9                | 50.0               | 98                    | 70-135               |       |

Lab Batch #: 760842

Sample: 333729-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 19:00

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 111                 | 100                | 111                   | 70-135               |       |
| o-Terphenyl                   | 56.6                | 50.0               | 113                   | 70-135               |       |

Lab Batch #: 760842

Sample: 333729-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 19:24

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 122                 | 100                | 122                   | 70-135               |       |
| o-Terphenyl                   | 51.1                | 50.0               | 102                   | 70-135               |       |

Lab Batch #: 760842

Sample: 333729-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 19:49

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 128                 | 100                | 128                   | 70-135               |       |
| o-Terphenyl                   | 57.1                | 50.0               | 114                   | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Project ID: 2009-092

Lab Batch #: 760842

Sample: 333729-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 20:14

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 125                 | 100                | 125                   | 70-135               |       |
| o-Terphenyl                   | 55.1                | 50.0               | 110                   | 70-135               |       |

Lab Batch #: 760842

Sample: 333729-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 20:39

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 125                 | 100                | 125                   | 70-135               |       |
| o-Terphenyl                   | 52.6                | 50.0               | 105                   | 70-135               |       |

Lab Batch #: 760842

Sample: 333729-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 21:04

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 125                 | 100                | 125                   | 70-135               |       |
| o-Terphenyl                   | 50.6                | 50.0               | 101                   | 70-135               |       |

Lab Batch #: 760842

Sample: 333729-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 21:28

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 95.5                | 100                | 96                    | 70-135               |       |
| o-Terphenyl                   | 51.2                | 50.0               | 102                   | 70-135               |       |

Lab Batch #: 760842

Sample: 333729-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 21:53

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 107                 | 100                | 107                   | 70-135               |       |
| o-Terphenyl                   | 50.6                | 50.0               | 101                   | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 333729,

Project ID: 2009-092

Lab Batch #: 760842

Sample: 333729-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 22:18

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 96.2                | 100                | 96                    | 70-135               |       |
| o-Terphenyl                   | 52.1                | 50.0               | 104                   | 70-135               |       |

Lab Batch #: 760842

Sample: 333729-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 22:43

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 93.1                | 100                | 93                    | 70-135               |       |
| o-Terphenyl                   | 50.1                | 50.0               | 100                   | 70-135               |       |

Lab Batch #: 760842

Sample: 333729-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 23:08

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 108                 | 100                | 108                   | 70-135               |       |
| o-Terphenyl                   | 48.4                | 50.0               | 97                    | 70-135               |       |

Lab Batch #: 760842

Sample: 333729-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 23:33

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 118                 | 100                | 118                   | 70-135               |       |
| o-Terphenyl                   | 50.4                | 50.0               | 101                   | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## BS / BSD Recoveries



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 333729

Analyst: ASA

Date Prepared: 05/30/2009

Project ID: 2009-092

Date Analyzed: 05/31/2009

Lab Batch ID: 760705

Sample: 530985-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| BTEX by EPA 8021B | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|-------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes          |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| Benzene           | ND                            | 0.1000                | 0.1043                          | 104                         | 0.1                   | 0.1094                                    | 109                           | 5        | 70-130                  | 35                        |      |
| Toluene           | ND                            | 0.1000                | 0.1019                          | 102                         | 0.1                   | 0.1068                                    | 107                           | 5        | 70-130                  | 35                        |      |
| Ethylbenzene      | ND                            | 0.1000                | 0.1079                          | 108                         | 0.1                   | 0.1133                                    | 113                           | 5        | 71-129                  | 35                        |      |
| m,p-Xylenes       | ND                            | 0.2000                | 0.2179                          | 109                         | 0.2                   | 0.2281                                    | 114                           | 5        | 70-135                  | 35                        |      |
| o-Xylene          | ND                            | 0.1000                | 0.1031                          | 103                         | 0.1                   | 0.1085                                    | 109                           | 5        | 71-133                  | 35                        |      |

Analyst: ASA

Date Prepared: 06/01/2009

Date Analyzed: 06/01/2009

Lab Batch ID: 760797

Sample: 531040-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| BTEX by EPA 8021B | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|-------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes          |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| Benzene           | ND                            | 0.1000                | 0.1105                          | 111                         | 0.1                   | 0.1094                                    | 109                           | 1        | 70-130                  | 35                        |      |
| Toluene           | ND                            | 0.1000                | 0.1066                          | 107                         | 0.1                   | 0.1053                                    | 105                           | 1        | 70-130                  | 35                        |      |
| Ethylbenzene      | ND                            | 0.1000                | 0.1109                          | 111                         | 0.1                   | 0.1096                                    | 110                           | 1        | 71-129                  | 35                        |      |
| m,p-Xylenes       | ND                            | 0.2000                | 0.2246                          | 112                         | 0.2                   | 0.2219                                    | 111                           | 1        | 70-135                  | 35                        |      |
| o-Xylene          | ND                            | 0.1000                | 0.1060                          | 106                         | 0.1                   | 0.1053                                    | 105                           | 1        | 71-133                  | 35                        |      |

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

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

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

All results are based on MDL and Validated for QC Purposes



## BS / BSD Recoveries



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 333729

Analyst: ASA

Date Prepared: 06/01/2009

Project ID: 2009-092

Date Analyzed: 06/02/2009

Lab Batch ID: 760926

Sample: 531104-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| BTEX by EPA 8021B | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|-------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes          |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| Benzene           | ND                            | 0.1000                | 0.1107                          | 111                         | 0.1                   | 0.1118                                    | 112                           | 1        | 70-130                  | 35                        |      |
| Toluene           | ND                            | 0.1000                | 0.1069                          | 107                         | 0.1                   | 0.1082                                    | 108                           | 1        | 70-130                  | 35                        |      |
| Ethylbenzene      | ND                            | 0.1000                | 0.1118                          | 112                         | 0.1                   | 0.1133                                    | 113                           | 1        | 71-129                  | 35                        |      |
| m,p-Xylenes       | ND                            | 0.2000                | 0.2249                          | 112                         | 0.2                   | 0.2274                                    | 114                           | 1        | 70-135                  | 35                        |      |
| o-Xylene          | ND                            | 0.1000                | 0.1067                          | 107                         | 0.1                   | 0.1081                                    | 108                           | 1        | 71-133                  | 35                        |      |

Analyst: BHW

Date Prepared: 06/01/2009

Date Analyzed: 06/01/2009

Lab Batch ID: 760837

Sample: 531068-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| TPH By SW8015 Mod                  | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes                           |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| C6-C12 Gasoline Range Hydrocarbons | ND                            | 1000                  | 842                             | 84                          | 1000                  | 841                                       | 84                            | 0        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | ND                            | 1000                  | 1040                            | 104                         | 1000                  | 1040                                      | 104                           | 0        | 70-135                  | 35                        |      |

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

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

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

All results are based on MDL and Validated for QC Purposes



## BS / BSD Recoveries



**Project Name: 14-Inch Vac to Jal - Legacy**

**Work Order #: 333729**

**Analyst: BHW**

**Date Prepared: 06/01/2009**

**Project ID: 2009-092**

**Date Analyzed: 06/01/2009**

**Lab Batch ID: 760842**

**Sample: 531073-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| TPH By SW8015 Mod                  | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes                           |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| C6-C12 Gasoline Range Hydrocarbons | ND                            | 1000                  | 908                             | 91                          | 1000                  | 904                                       | 90                            | 0        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | ND                            | 1000                  | 1080                            | 108                         | 1000                  | 1070                                      | 107                           | 1        | 70-135                  | 35                        |      |

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS / MSD Recoveries



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 333729

Project ID: 2009-092

Lab Batch ID: 760705

QC- Sample ID: 333729-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/01/2009

Date Prepared: 05/30/2009

Analyst: ASA

Reporting Units: mg/kg

| MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
|--|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| BTEX by EPA 8021B<br>Analytes                        | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
| Benzene  | 0.0023                            | 0.1141                | 0.0980                         | 84                            | 0.1141                | 0.0977                                   | 84                          | 0        | 70-130                  | 35                        |      |
| Toluene  | 0.0088                            | 0.1141                | 0.1059                         | 85                            | 0.1141                | 0.0984                                   | 79                          | 7        | 70-130                  | 35                        |      |
| Ethylbenzene   | 0.0069                            | 0.1141                | 0.0971                         | 79                            | 0.1141                | 0.0978                                   | 80                          | 1        | 71-129                  | 35                        |      |
| m,p-Xylenes  | 0.0121                            | 0.2282                | 0.1902                         | 78                            | 0.2282                | 0.1946                                   | 80                          | 2        | 70-135                  | 35                        |      |
| o-Xylene   | 0.0052                            | 0.1141                | 0.0926                         | 77                            | 0.1141                | -0.0935                                  | 77                          | 1        | 71-133                  | 35                        |      |

Lab Batch ID: 760797

QC- Sample ID: 333729-025 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/01/2009

Date Prepared: 06/01/2009

Analyst: ASA

Reporting Units: mg/kg

| MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
|--|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| BTEX by EPA 8021B<br>Analytes                        | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
| Benzene  | ND                                | 0.1162                | 0.1004                         | 86                            | 0.1162                | 0.1043                                   | 90                          | 4        | 70-130                  | 35                        |      |
| Toluene  | ND                                | 0.1162                | 0.0976                         | 84                            | 0.1162                | 0.0997                                   | 86                          | 2        | 70-130                  | 35                        |      |
| Ethylbenzene   | ND                                | 0.1162                | 0.0802                         | 69                            | 0.1162                | 0.0777                                   | 67                          | 3        | 71-129                  | 35                        | X    |
| m,p-Xylenes  | ND                                | 0.2323                | 0.2091                         | 90                            | 0.2323                | 0.2156                                   | 93                          | 3        | 70-135                  | 35                        |      |
| o-Xylene   | ND                                | 0.1162                | 0.1001                         | 86                            | 0.1162                | 0.1025                                   | 88                          | 2        | 71-133                  | 35                        |      |

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

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

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



# Form 3 - MSD Recoveries



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 333729

Project ID: 2009-092

Lab Batch ID: 760926

QC- Sample ID: 334047-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/02/2009

Date Prepared: 06/01/2009

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B<br>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                       | 0.0039                   | 0.1162          | 0.0695                   | 56                   | 0.1162          | 0.0599                             | 48                 | 15    | 70-130            | 35                  | X    |
| Toluene                       | 0.0316                   | 0.1162          | 0.0582                   | 23                   | 0.1162          | 0.0535                             | 19                 | 8     | 70-130            | 35                  | X    |
| Ethylbenzene                  | 0.0370                   | 0.1162          | 0.0447                   | 7                    | 0.1162          | 0.0421                             | 4                  | 6     | 71-129            | 35                  | X    |
| m,p-Xylenes                   | 0.0469                   | 0.2323          | 0.1022                   | 24                   | 0.2323          | 0.0944                             | 20                 | 8     | 70-135            | 35                  | X    |
| o-Xylene                      | 0.0475                   | 0.1162          | 0.0447                   | 0                    | 0.1162          | 0.0418                             | 0                  | 7     | 71-133            | 35                  | X    |

Lab Batch ID: 760837

QC- Sample ID: 333729-027 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/01/2009

Date Prepared: 06/01/2009

Analyst: BHW

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes      | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|------------------------------------|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| C6-C12 Gasoline Range Hydrocarbons | ND                       | 1170            | 1030                     | 88                   | 1170            | 1060                               | 91                 | 3     | 70-135            | 35                  |      |
| C12-C28 Diesel Range Hydrocarbons  | 69.7                     | 1170            | 1320                     | 107                  | 1170            | 1380                               | 112                | 4     | 70-135            | 35                  |      |

Lab Batch ID: 760842

QC- Sample ID: 333729-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/01/2009

Date Prepared: 06/01/2009

Analyst: BHW

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes      | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|------------------------------------|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| C6-C12 Gasoline Range Hydrocarbons | ND                       | 1100            | 987                      | 90                   | 1100            | 1090                               | 99                 | 10    | 70-135            | 35                  |      |
| C12-C28 Diesel Range Hydrocarbons  | 16.4                     | 1100            | 1170                     | 105                  | 1100            | 1300                               | 117                | 11    | 70-135            | 35                  |      |

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

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

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



## Sample Duplicate Recovery



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 333729

Lab Batch #: 760246

Date Analyzed: 05/28/2009

QC- Sample ID: 333729-001 D

Reporting Units: %

Project ID: 2009-092

Analyst: BEV

Batch #: 1

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 8.71                     | 10.5                        | 18  | 20                  |      |

Lab Batch #: 760247

Date Analyzed: 05/28/2009

QC- Sample ID: 333729-021 D

Reporting Units: %

Date Prepared: 05/28/2009

Analyst: BEV

Batch #: 1

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 12.8                     | 12.9                        | 1   | 20                  |      |

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

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

BRL - Below Reporting Limit



12600 West I-20 East  
Odessa, Texas 79765

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

Project Manager, Camillo Bryant

**Project Name: 14-Inch Vac to Jal - Legacy**

Company Name Basin Environmental Service Technologies, LLC

Project #: 2009-092

Company Address P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA - J. Henry

Telephone No. (575) 605-7210

Fax No' (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPOES

Sampler Signature: [Signature] e-mail: \_\_\_\_\_

cibryant@basin-consulting.com

| LAB (lab use only)            |               | ORDER #         |              | 333729       |              | Preservation & # of Containers |                       | Matrix           |                  | TCLP                           |      | TOTAL:  |      | X               |   | RUSH TAT (Pre-Schedule) 24, 48, 72 hrs |         |                               |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
|-------------------------------|---------------|-----------------|--------------|--------------|--------------|--------------------------------|-----------------------|------------------|------------------|--------------------------------|------|---|------|-----------------|---|--|---------|-------------------------------|-------------------------|---|-----------------|------------------------------------|-----------|----------------|------------------------------|-----|------|--------------------|--|--|--|
| LAB (lab use only)            | FIELD CODE    | Beginning Depth | Ending Depth | Date Sampled | Time Sampled | Field Filtered                 | Total # of Containers | H <sub>2</sub> O | HNO <sub>3</sub> | H <sub>2</sub> SO <sub>4</sub> | NaOH | Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub> | None | Other (Specify) | DW = Drinking Water S. = Sludge<br>CW = Creekwater S. = Seawater<br>N = Non-Volatile Specify Only | TPH                                    | TX 1005 | TX 1006                       | Cations (Ca, Mg, Na, K) | Anions (Cl, SO <sub>4</sub> , Alkalinity) | SWR / EBP / CEC | Mastic Air Ag (a) Co (a) Pb (a) Ba | Volatiles | Semi-volatiles | BTET 40010.03020 = BTET 4000 | TCI | NORM | Standard TAT & DAY |  |  |  |
| 018                           | T-1 @ 10' bgs |                 |              | 5/26/09      | 1000         | 1                              | X                     |                  |                  |                                |      |   |      | SOIL            | X   |  |         |                               |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| 018                           | T-2 @ 12' bgs |                 |              | 5/26/09      | 1005         | 1                              | X                     |                  |                  |                                |      |   |      | SOIL            | X   |  |         |                               |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| 018                           | T-2 @ 14' bgs |                 |              | 5/26/09      | 1010         | 1                              | X                     |                  |                  |                                |      |   |      | SOIL            | X   |  |         |                               |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| 018                           | T-2 @ 18' bgs |                 |              | 5/26/09      | 1020         | 1                              | X                     |                  |                  |                                |      |   |      | SOIL            | X   |  |         |                               |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| 018                           | T-3 @ 12' bgs |                 |              | 5/26/09      | 1030         | 1                              | X                     |                  |                  |                                |      |   |      | SOIL            | X   |  |         |                               |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| 018                           | T-3 @ 14' bgs |                 |              | 5/26/09      | 1040         | 1                              | X                     |                  |                  |                                |      |   |      | SOIL            | X   |  |         |                               |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| 018                           | T-3 @ 18' bgs |                 |              | 5/26/09      | 1050         | 1                              | X                     |                  |                  |                                |      |   |      | SOIL            | X   |  |         |                               |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| 018                           | T-3 @ 22' bgs |                 |              | 5/26/09      | 1100         | 1                              | X                     |                  |                  |                                |      |   |      | SOIL            | X   |  |         |                               |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| 018                           | T-3 @ 26' bgs |                 |              | 5/26/09      | 1110         | 1                              | X                     |                  |                  |                                |      |   |      | SOIL            | X   |  |         |                               |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| 018                           | T-3 @ 30' bgs |                 |              | 5/26/09      | 1120         | 1                              | X                     |                  |                  |                                |      |   |      | SOIL            | X   |  |         |                               |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| Special Instructions:         |               |                 |              |              |              |                                |                       |                  |                  |                                |      |   |      |                 |   |  |         | Laboratory Comments:          |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| Requisitioned by: [Signature] |               |                 |              |              |              |                                |                       |                  |                  |                                |      |   |      |                 |   |  |         | Sample Containers Intact?     |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| Requisitioned by: [Signature] |               |                 |              |              |              |                                |                       |                  |                  |                                |      |   |      |                 |   |  |         | VOCs Free of Headspace?       |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| Requisitioned by: [Signature] |               |                 |              |              |              |                                |                       |                  |                  |                                |      |   |      |                 |   |  |         | Labels on container(s)        |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| Requisitioned by: [Signature] |               |                 |              |              |              |                                |                       |                  |                  |                                |      |   |      |                 |   |  |         | Custody seals on container(s) |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| Requisitioned by: [Signature] |               |                 |              |              |              |                                |                       |                  |                  |                                |      |   |      |                 |   |  |         | Custody seals on cooler(s)    |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| Requisitioned by: [Signature] |               |                 |              |              |              |                                |                       |                  |                  |                                |      |   |      |                 |   |  |         | Sample Hand Delivered         |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| Requisitioned by: [Signature] |               |                 |              |              |              |                                |                       |                  |                  |                                |      |   |      |                 |   |  |         | by Sample Client Rep.         |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| Requisitioned by: [Signature] |               |                 |              |              |              |                                |                       |                  |                  |                                |      |   |      |                 |   |  |         | by Courier                    |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |
| Requisitioned by: [Signature] |               |                 |              |              |              |                                |                       |                  |                  |                                |      |   |      |                 |   |  |         | Temperature Upon Receipt      |                         |   |                 |                                    |           |                |                              |     |      |                    |  |  |  |

12600 West I-20 East  
Odessa, Texas 79765

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

Project Manager: Camille Bryant

**Project Name: 14-Inch Vac to Jal - Legacy**

Company Name Basin Environmental Service Technologies, LLC

**Project #: 2009-092**

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lowington, NM 88260

FO #: PAA - J. Henry

Telephone No. (575) 605-7210

Fax No: (505) 398-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: John Kamea Karent

e-mail: [cibryant@basin-consulting.com](mailto:cibryant@basin-consulting.com)

[illegible]

## Environmental Lab of Texas

Page 3 of 3

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East  
Odessa, Texas 79785

Phone: 432-583-1800  
Fax: 432-583-1713

Project Manager Camillo Bryant

**Project Name: 14-Inch Vac to Jal - Legacy**

Company Name Basin Environmental Service Technologies, LLC

Project #: 2009-092

Company Address: P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA - J. Henry

Telephone No. (575) 605-7210

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Emily Lamicoe, R.E.

e-mail: [cibryant@basin-consulting.com](mailto:cibryant@basin-consulting.com)

| LAB # (lab use only) |                | FIELD CODE |                | Beginning Depth | Ending Depth | Date Sampled | Time Sampled | Preservation & # of Containers |                       |     |     |     |     |      |      |      |      | Matrix |       | ICPL  |        | TOTAL  |        | Analyze For |         |         |         |          |          |          |           |           |           |            |            |            |            |             |             |             |              |              |              |               |               |               |               |                |                |                |                 |                 |                 |                  |                  |                  |                  |                   |                   |                   |                    |                    |                    |                     |                     |                     |                     |                      |                      |                      |                       |                       |                       |                        |                        |                        |                        |                         |                         |                         |                          |                          |                          |                           |                           |                           |                           |                            |                            |                            |                             |                             |                             |                              |                              |                              |                              |                               |                               |                               |                                |                                |                                |                                 |                                 |                                 |                                 |                                  |                                  |                                  |                                   |                                   |                                   |                                    |                                    |                                    |                                     |                                     |                                     |                                     |                                      |                                      |                                      |                                       |                                       |                                       |  |  |  |  |   |   |   |  |  |  |   |   |   |   |  |  |  |   |   |   |  |                              |
|----------------------|----------------|------------|----------------|-----------------|--------------|--------------|--------------|--------------------------------|-----------------------|-----|-----|-----|-----|------|------|------|------|--------|-------|-------|--------|--------|--------|-------------|---------|---------|---------|----------|----------|----------|-----------|-----------|-----------|------------|------------|------------|------------|-------------|-------------|-------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|------------------------|-------------------------|-------------------------|-------------------------|--------------------------|--------------------------|--------------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|------------------------------------|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|--|--|--|--|---|---|---|--|--|--|---|---|---|---|--|--|--|---|---|---|--|------------------------------|
| LAB #                | (lab use only) | LAB #      | (lab use only) |                 |              |              |              | Field Filtered                 | Total # of Containers | 1 L | 2 L | 4 L | 5 L | 10 L | 20 L | 40 L | 80 L | 160 L  | 320 L | 640 L | 1280 L | 2560 L | 5120 L | 10240 L     | 20480 L | 40960 L | 81920 L | 163840 L | 327680 L | 655360 L | 1310720 L | 2621440 L | 5242880 L | 10485760 L | 20971520 L | 41943040 L | 83886080 L | 167772160 L | 335544320 L | 671088640 L | 1342177280 L | 2684354560 L | 5368709120 L | 10737418240 L | 21474836480 L | 42949672960 L | 85899345920 L | 171798691840 L | 343597383680 L | 687194767360 L | 1374389534720 L | 2748779069440 L | 5497558138880 L | 10995116277760 L | 21990232555520 L | 43980465111040 L | 87960930222080 L | 175921860444160 L | 351843720888320 L | 703687441776640 L | 1407374883553280 L | 2814749767106560 L | 5629499534213120 L | 11258999068426240 L | 22517998136852480 L | 45035996273704960 L | 90071992547409920 L | 180143985094819840 L | 360287970189639680 L | 720575940379279360 L | 1441151880758558720 L | 2882303761517117440 L | 5764607523034234880 L | 11529215046068469760 L | 23058430092136939520 L | 46116860184273879040 L | 92233720368547758080 L | 184467440737095516160 L | 368934881474191032320 L | 737869762948382064640 L | 1475739525896764129280 L | 2951479051793528258560 L | 5902958103587056517120 L | 11805916207174113034240 L | 23611832414348226068480 L | 47223664828696452136960 L | 94447329657392904273920 L | 188894659314785808547840 L | 377789318629571617095680 L | 755578637259143234191360 L | 1511157274518286468382720 L | 3022314549036572936765440 L | 6044629098073145873530880 L | 12089258196146291747061760 L | 24178516392292583494123520 L | 48357032784585166988247040 L | 96714065569170333976494080 L | 193428131138340667952988160 L | 386856262276681335905976320 L | 773712524553362671811952640 L | 1547425049106725343623905280 L | 3094850098213450687247810560 L | 6189700196426901374495621120 L | 12379400392853802748991242240 L | 24758800785707605497982484480 L | 49517601571415210995964968960 L | 99035203142830421991929937920 L | 198070406285660843983859875840 L | 396140812571321687967719751680 L | 792281625142643375935439503360 L | 1584563250285286751870879006720 L | 3169126500570573503741758013440 L | 6338253001141147007483516026880 L | 12676506002282294014967032053760 L | 25353012004564588029934064107520 L | 50706024009129176059868128215040 L | 101412048018258352119736256430080 L | 202824096036516704239472512860160 L | 405648192073033408478945025720320 L | 811296384146066816957890051440640 L | 1622592768292133633915780102881280 L | 3245185536584267267831560205762560 L | 6490371073168534535663120411525120 L | 12980742146337069071326240823050240 L | 25961484292674138142652481646100480 L | 51922968585348276285304963292200960 L | 103845937170696552570609926584401920 L | 207691874341393105141219853168803840 L | 415383748682786210282439706337607680 L | 830767497365572420564879412675215360 L | 1661534994731144841129758825350430720 L | 3323069989462289682259517650700861440 L | 6646139978924579364519035301401722880 L | 13292279957849158729038070602803445760 L | 26584559915698317458076141205606891520 L | 53169119831396634916152282411213783040 L | 106338239662793269832304564822427566080 L | 212676479325586539664609129644855132160 L | 425352958651173079329218259289710264320 L | 850705917302346158658436518579420528640 L | 1701411834604692317316873037158841057280 L | 3402823669209384634633746074317682114560 L | 6805647338418769269267492148635364229120 L | 13611294676837538538534984297270728458240 L | 27222589353675077077069968594541456916480 L | 54445178707350154154139937189082913832960 L | 108890357414700308308279874378165827665920 L | 2177807148294006166165597487 |

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

Client: Basin/Plains  
Date/ Time: 05/27/09 8:34  
Lab ID #: 333729  
Initials: gmu

**Sample Receipt Checklist**

|     |  |   | Client Initials             |                          |
|-----|--|---|-----------------------------|--------------------------|
| #1  | Temperature of container/ cooler?                      | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | -1.5 °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 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 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 334002**

**for**

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

**Project Manager: Jason Henry**

**14" Vac to Jal - Legacy**

**2009-092**

**03-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**



03-JUN-09

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

Reference: XENCO Report No: **334002**  
**14" Vac to Jal - Legacy**  
Project Address: Jal, 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 334002. 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. 334002 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 334002



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal - Legacy

| Sample Id               | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|-------------------------|--------|-----------------|--------------|---------------|
| Main Exc. ESW-1 @ 8'bgs | S      | May-28-09 15:30 |              | 334002-001    |
| Main Exc. ESW-2 @ 5'bgs | S      | May-28-09 15:40 |              | 334002-002    |
| Main Exc. ESW-3 @ 3'bgs | S      | May-28-09 15:50 |              | 334002-003    |
| Main Exc. SSW @ 9.5'bgs | S      | May-28-09 16:00 |              | 334002-004    |



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: 14" Vac to Jal - Legacy*

*Project ID: 2009-092*

*Work Order Number: 334002*

*Report Date: 03-JUN-09*

*Date Received: 05/28/2009*

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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-760577 Percent Moisture

AD2216A

Batch 760577, Percent Moisture RPD is outside the QC limit. This is most likely due to sample non-homogeneity.

Samples affected are: 334002-001, -003, -002, -004.

Batch: LBA-760797 BTEX-MTBE EPA 8021B

SW8021BM

Batch 760797, 4-Bromofluorobenzene recovered below QC limits. Data not confirmed by re-analysis. Samples affected are: 531040-1-BLK, 334002-002, 334002-001. Matrix Interferences are suspected in sample surrogate failures.

SW8021BM

Batch 760797, Ethylbenzene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 334002-001, -003, -002, -004.

The Laboratory Control Sample for Ethylbenzene is within laboratory Control Limits

Batch: LBA-760837 TPH by SW8015 Mod

None

Batch: LBA-761030 TPH by SW8015 Mod

None





# Certificate of Analysis Summary 334002

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal - Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Jal, NM

Date Received in Lab: Thu May-28-09 05:45 pm


Report Date: 03-JUN-09

Project Manager: Brent Barron, II

| <i>Analysis Requested</i>          | <i>Lab Id:</i>    | 334002-001             | 334002-002             | 334002-003             | 334002-004             |  |  |
|------------------------------------|-------------------|------------------------|------------------------|------------------------|------------------------|--|--|
|                                    | <i>Field Id:</i>  | Main Exc ESW-1 @ 8'bgs | Main Exc ESW-2 @ 5'bgs | Main Exc ESW-3 @ 3'bgs | Main Exc SSW @ 9 5'bgs |  |  |
|                                    | <i>Depth:</i>     |                        |                        |                        |                        |  |  |
|                                    | <i>Matrix:</i>    | SOIL                   | SOIL                   | SOIL                   | SOIL                   |  |  |
|                                    | <i>Sampled:</i>   | May-28-09 15:30        | May-28-09 15:40        | May-28-09 15:50        | May-28-09 16:00        |  |  |
| <b>BTEX by EPA 8021B</b>           | <i>Extracted:</i> | Jun-01-09 08:00        | Jun-01-09 08:00        | Jun-01-09 08:00        | Jun-01-09 08:00        |  |  |
|                                    | <i>Analyzed:</i>  | Jun-01-09 16:32        | Jun-01-09 16:54        | Jun-01-09 17:16        | Jun-01-09 17:38        |  |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL               | mg/kg RL               | mg/kg RL               | mg/kg RL               |  |  |
| Benzene                            |                   | ND 0.0011              | ND 0.0011              | ND 0.0010              | ND 0.0011              |  |  |
| Toluene                            |                   | ND 0.0022              | ND 0.0021              | ND 0.0021              | ND 0.0022              |  |  |
| Ethylbenzene                       |                   | ND 0.0011              | ND 0.0011              | ND 0.0010              | ND 0.0011              |  |  |
| m,p-Xylenes                        |                   | ND 0.0022              | ND 0.0021              | ND 0.0021              | ND 0.0022              |  |  |
| o-Xylene                           |                   | ND 0.0011              | ND 0.0011              | ND 0.0010              | ND 0.0011              |  |  |
| Total Xylenes                      |                   | ND 0.0011              | ND 0.0011              | ND 0.0010              | ND 0.0011              |  |  |
| Total BTEX                         |                   | ND 0.0011              | ND 0.0011              | ND 0.0010              | ND 0.0011              |  |  |
| <b>Percent Moisture</b>            | <i>Extracted:</i> |                        |                        |                        |                        |  |  |
|                                    | <i>Analyzed:</i>  | May-29-09 14:05        | May-29-09 14:05        | May-29-09 14:05        | May-29-09 14:05        |  |  |
|                                    | <i>Units/RL:</i>  | % RL                   | % RL                   | % RL                   | % RL                   |  |  |
| Percent Moisture                   |                   | 10.85 1.00             | 6.16 1.00              | 3.18 1.00              | 9.90 1.00              |  |  |
| <b>TPH By SW8015 Mod</b>           | <i>Extracted:</i> | Jun-01-09 12:14        | Jun-01-09 14:45        | Jun-01-09 14:45        | Jun-01-09 14:45        |  |  |
|                                    | <i>Analyzed:</i>  | Jun-01-09 21:12        | Jun-02-09 16:58        | Jun-02-09 17:21        | Jun-02-09 17:44        |  |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL               | mg/kg RL               | mg/kg RL               | mg/kg RL               |  |  |
| C6-C12 Gasoline Range Hydrocarbons |                   | ND 16.8                | ND 16.0                | ND 15.5                | ND 16.6                |  |  |
| C12-C28 Diesel Range Hydrocarbons  |                   | 38.8 16.8              | ND 16.0                | 59.9 15.5              | ND 16.6                |  |  |
| C28-C35 Oil Range Hydrocarbons     |                   | ND 16.8                | ND 16.0                | 26.3 15.5              | ND 16.6                |  |  |
| Total TPH                          |                   | 38.8 16.8              | ND 16.0                | 86.2 15.5              | ND 16.6                |  |  |

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

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Brent Barron  
Odessa Laboratory Director

- 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: 14" Vac to Jal - Legacy

Work Orders : 334002,

Project ID: 2009-092

Lab Batch #: 760797

Sample: 531040-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 09:29

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0323              | 0.0300             | 108                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0267              | 0.0300             | 89                    | 80-120               |       |

Lab Batch #: 760797

Sample: 531040-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 09:51

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0324              | 0.0300             | 108                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0267              | 0.0300             | 89                    | 80-120               |       |

Lab Batch #: 760797

Sample: 531040-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 10:34

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0276              | 0.0300             | 92                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0220              | 0.0300             | 73                    | 80-120               | *     |

Lab Batch #: 760797

Sample: 334002-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 16:32

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0275              | 0.0300             | 92                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0223              | 0.0300             | 74                    | 80-120               | *     |

Lab Batch #: 760797

Sample: 334002-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 16:54

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0276              | 0.0300             | 92                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0232              | 0.0300             | 77                    | 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: 14" Vac to Jal - Legacy

Work Orders : 334002,

Project ID: 2009-092

Lab Batch #: 760797

Sample: 334002-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 17:16

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0273              | 0.0300             | 91                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0251              | 0.0300             | 84                    | 80-120               |       |

Lab Batch #: 760797

Sample: 334002-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 17:38

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0277              | 0.0300             | 92                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0245              | 0.0300             | 82                    | 80-120               |       |

Lab Batch #: 760797

Sample: 333729-025 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 19:04

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0315              | 0.0300             | 105                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0281              | 0.0300             | 94                    | 80-120               |       |

Lab Batch #: 760797

Sample: 333729-025 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 19:26

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0315              | 0.0300             | 105                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0271              | 0.0300             | 90                    | 80-120               |       |

Lab Batch #: 760837

Sample: 531068-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 12:23

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 105                 | 100                | 105                   | 70-135               |       |
| o-Terphenyl                   | 42.0                | 50.0               | 84                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal - Legacy

Work Orders : 334002,

Project ID: 2009-092

Lab Batch #: 760837

Sample: 531068-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 12:46

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 106                 | 100                | 106                   | 70-135               |       |
| o-Terphenyl                   | 42.8                | 50.0               | 86                    | 70-135               |       |

Lab Batch #: 760837

Sample: 531068-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/01/09 13:10

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 92.3                | 100                | 92                    | 70-135               |       |
| o-Terphenyl                   | 47.0                | 50.0               | 94                    | 70-135               |       |

Lab Batch #: 760837

Sample: 334002-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 21:12

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 96.6                | 100                | 97                    | 70-135               |       |
| o-Terphenyl                   | 52.2                | 50.0               | 104                   | 70-135               |       |

Lab Batch #: 760837

Sample: 333729-027 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 21:35

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 113                 | 100                | 113                   | 70-135               |       |
| o-Terphenyl                   | 47.5                | 50.0               | 95                    | 70-135               |       |

Lab Batch #: 760837

Sample: 333729-027 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/01/09 21:58

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 117                 | 100                | 117                   | 70-135               |       |
| o-Terphenyl                   | 49.1                | 50.0               | 98                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal - Legacy

Work Orders : 334002,

Project ID: 2009-092

Lab Batch #: 761030

Sample: 531173-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/02/09 15:49

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 112                 | 100                | 112                   | 70-135               |       |
| o-Terphenyl                   | 47.3                | 50.0               | 95                    | 70-135               |       |

Lab Batch #: 761030

Sample: 531173-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/02/09 16:12

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 112                 | 100                | 112                   | 70-135               |       |
| o-Terphenyl                   | 46.0                | 50.0               | 92                    | 70-135               |       |

Lab Batch #: 761030

Sample: 531173-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/02/09 16:35

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 94.3                | 100                | 94                    | 70-135               |       |
| o-Terphenyl                   | 50.6                | 50.0               | 101                   | 70-135               |       |

Lab Batch #: 761030

Sample: 334002-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 16:58

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 98.1                | 100                | 98                    | 70-135               |       |
| o-Terphenyl                   | 52.0                | 50.0               | 104                   | 70-135               |       |

Lab Batch #: 761030

Sample: 334002-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 17:21

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 105                 | 100                | 105                   | 70-135               |       |
| o-Terphenyl                   | 54.0                | 50.0               | 108                   | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

All results are based on MDL and validated for QC purposes



## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal - Legacy

Work Orders : 334002,

Lab Batch #: 761030

Sample: 334002-004 / SMP

Project ID: 2009-092

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 17:44

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 104                 | 100                | 104                   | 70-135               |       |
| o-Terphenyl                   | 53.8                | 50.0               | 108                   | 70-135               |       |

Lab Batch #: 761030

Sample: 334002-004 S / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 21:56

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 121                 | 100                | 121                   | 70-135               |       |
| o-Terphenyl                   | 55.0                | 50.0               | 110                   | 70-135               |       |

Lab Batch #: 761030

Sample: 334002-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/02/09 22:18

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 124                 | 100                | 124                   | 70-135               |       |
| o-Terphenyl                   | 52.3                | 50.0               | 105                   | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

All results are based on MDL and validated for QC purposes



## BS / BSD Recoveries



**Project Name: 14" Vac to Jal - Legacy**

**Work Order #: 334002**

**Analyst: ASA**

**Date Prepared: 06/01/2009**

**Project ID: 2009-092**

**Date Analyzed: 06/01/2009**

**Lab Batch ID: 760797**

**Sample: 531040-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| <b>BTEX by EPA 8021B</b> | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|--------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>          |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| Benzene                  | ND                                     | 0.1000                         | 0.1105                                    | 111                                   | 0.1                            | 0.1094  | 109                                     | 1                | 70-130                           | 35                                 |             |
| Toluene                  | ND                                     | 0.1000                         | 0.1066                                    | 107                                   | 0.1                            | 0.1053  | 105                                     | 1                | 70-130                           | 35                                 |             |
| Ethylbenzene             | ND                                     | 0.1000                         | 0.1109                                    | 111                                   | 0.1                            | 0.1096  | 110                                     | 1                | 71-129                           | 35                                 |             |
| m,p-Xylenes              | ND                                     | 0.2000                         | 0.2246                                    | 112                                   | 0.2                            | 0.2219  | 111                                     | 1                | 70-135                           | 35                                 |             |
| o-Xylene                 | ND                                     | 0.1000                         | 0.1060                                    | 106                                   | 0.1                            | 0.1053  | 105                                     | 1                | 71-133                           | 35                                 |             |

**Analyst: BHW**

**Date Prepared: 06/01/2009**

**Date Analyzed: 06/01/2009**

**Lab Batch ID: 760837**

**Sample: 531068-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| <b>TPH By SW8015 Mod</b>           | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|------------------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>                    |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| C6-C12 Gasoline Range Hydrocarbons | ND                                     | 1000                           | 842                                       | 84                                    | 1000                           | 841   | 84                                      | 0                | 70-135                           | 35                                 |             |
| C12-C28 Diesel Range Hydrocarbons  | ND                                     | 1000                           | 1040                                      | 104                                   | 1000                           | 1040  | 104                                     | 0                | 70-135                           | 35                                 |             |

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

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

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

All results are based on MDL and Validated for QC Purposes





## BS / BSD Recoveries



Project Name: 14" Vac to Jal - Legacy

Work Order #: 334002

Analyst: BHW

Date Prepared: 06/01/2009

Project ID: 2009-092

Date Analyzed: 06/02/2009

Lab Batch ID: 761030

Sample: 531173-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| TPH By SW8015 Mod                  | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes                           |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| C6-C12 Gasoline Range Hydrocarbons | ND                            | 1000                  | 877                             | 88                          | 1000                  | 873                                       | 87                            | 0        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | ND                            | 1000                  | 1120                            | 112                         | 1000                  | 1100                                      | 110                           | 2        | 70-135                  | 35                        |      |

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS / MSD Recoveries



Project Name: 14" Vac to Jal - Legacy

Work Order #: 334002

Project ID: 2009-092

Lab Batch ID: 760797

QC- Sample ID: 333729-025 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/01/2009

Date Prepared: 06/01/2009

Analyst: ASA

Reporting Units: mg/kg

| MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY |                          |                 |                          |                      |                 |                                    |                    |       |                   |                     |      |
|--|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| BTEX by EPA 8021B<br>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                       | 0.1162          | 0.1004                   | 86                   | 0.1162          | 0.1043                             | 90                 | 4     | 70-130            | 35                  |      |
| Toluene  | ND                       | 0.1162          | 0.0976                   | 84                   | 0.1162          | 0.0997                             | 86                 | 2     | 70-130            | 35                  |      |
| Ethylbenzene   | ND                       | 0.1162          | 0.0802                   | 69                   | 0.1162          | 0.0777                             | 67                 | 3     | 71-129            | 35                  | X    |
| m,p-Xylenes  | ND                       | 0.2323          | 0.2091                   | 90                   | 0.2323          | 0.2156                             | 93                 | 3     | 70-135            | 35                  |      |
| o-Xylene   | ND                       | 0.1162          | 0.1001                   | 86                   | 0.1162          | 0.1025                             | 88                 | 2     | 71-133            | 35                  |      |

Lab Batch ID: 760837

QC- Sample ID: 333729-027 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/01/2009

Date Prepared: 06/01/2009

Analyst: BHW

Reporting Units: mg/kg

| MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY |                          |                 |                          |                      |                 |                                    |                    |       |                   |                     |      |
|--|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| TPH By SW8015 Mod<br>Analytes                        | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
| C6-C12 Gasoline Range Hydrocarbons                   | ND                       | 1170            | 1030                     | 88                   | 1170            | 1060                               | 91                 | 3     | 70-135            | 35                  |      |
| C12-C28 Diesel Range Hydrocarbons                    | 69.7                     | 1170            | 1320                     | 107                  | 1170            | 1380                               | 112                | 4     | 70-135            | 35                  |      |

Lab Batch ID: 761030

QC- Sample ID: 334002-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/02/2009

Date Prepared: 06/01/2009

Analyst: BHW

Reporting Units: mg/kg

| MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY |                          |                 |                          |                      |                 |                                    |                    |       |                   |                     |      |
|--|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| TPH By SW8015 Mod<br>Analytes                        | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
| C6-C12 Gasoline Range Hydrocarbons                   | ND                       | 1110            | 1000                     | 90                   | 1110            | 1040                               | 94                 | 4     | 70-135            | 35                  |      |
| C12-C28 Diesel Range Hydrocarbons                    | ND                       | 1110            | 1240                     | 112                  | 1110            | 1290                               | 116                | 4     | 70-135            | 35                  |      |

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

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

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



## Sample Duplicate Recovery



Project Name: 14" Vac to Jal - Legacy

Work Order #: 334002

Lab Batch #: 760577

Project ID: 2009-092

Date Analyzed: 05/29/2009

Date Prepared: 05/29/2009

Analyst: JLG

QC- Sample ID: 333999-001 S D

Batch #: 1

Matrix: Soil

Reporting Units: %

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 2.91                     | 5.39                        | 60  | 20                  | F    |

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

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

BRL - Below Reporting Limit

The Environmental Lab of Texas

12600 West I-20 East  
Odessa, Texas 79765

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

**Sampler Signature:**

W. H. S. Fisher

**e-mail:**

PO #: PAA-J. Henry

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

ORDER #: 334002

Special Instructions:

Released by

100

Received by

53

1

05.39

|      |                          |
|------|--------------------------|
| Time | Temperature Upon Receipt |
| 1745 |                          |

Y N  
Y N  
Y N  
Y N  
Y N  
Y N  
Y N  
FedEx Lone Star  
45 °C

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

Client: Platts / Basin  
Date/ Time: 05-28-09 @ 1745  
Lab ID #: 3374002  
Initials: JMF

**Sample Receipt Checklist**

|   | Yes                                 | No                       | Client Initials          |
|---|-------------------------------------|--------------------------|--------------------------|
| #1 Temperature of container/ cooler?                          | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4.5 °C                   |
| #2 Shipping container in good condition?                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                          |
| #3 Custody Seals intact on shipping container/ cooler?        | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Not Present              |
| #4 Custody Seals intact on sample bottles/ container? / (lab) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Not Present              |
| #5 Chain of Custody present?                                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                          |
| #6 Sample instructions complete of Chain of Custody?          | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                          |
| #7 Chain of Custody signed when relinquished/ received?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                          |
| #8 Chain of Custody agrees with sample label(s)?              | <input checked="" type="checkbox"/> | <input type="checkbox"/> | ID written on Cont./ Lid |
| #9 Container label(s) legible and intact?                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Not Applicable           |
| #10 Sample matrix/ properties agree with Chain of Custody?    | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                          |
| #11 Containers supplied by ELOT?                              | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                          |
| #12 Samples in proper container/ bottle?                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | See Below                |
| #13 Samples properly preserved?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> | See Below                |
| #14 Sample bottles intact?                                    | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                          |
| #15 Preservations documented on Chain of Custody?             | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                          |
| #16 Containers documented on Chain of Custody?                | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                          |
| #17 Sufficient sample amount for indicated test(s)?           | <input checked="" type="checkbox"/> | <input type="checkbox"/> | See Below                |
| #18 All samples received within sufficient hold time?         | <input checked="" type="checkbox"/> | <input type="checkbox"/> | See Below                |
| #19 Subcontract of sample(s)?                                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Not Applicable           |
| #20 VOC samples have zero headspace?                          | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 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 337175**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14-Inch Vac to Jal- Legacy**

**2009-092**

**03-AUG-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-Miramar (EPA Lab code: FL01246): Florida (E86349)

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)

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



03-AUG-09

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

Reference: XENCO Report No: **337175**  
**14-Inch Vac to Jal- Legacy**  
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 337175. 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. 337175 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 337175****PLAINS ALL AMERICAN EH&S, Midland, TX**

14-Inch Vac to Jal- Legacy

| Sample Id  | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|------------|--------|-----------------|--------------|---------------|
| MW-1 @ 5'  | S      | Jul-01-09 09:30 |              | 337175-001    |
| MW-1 @ 15' | S      | Jul-01-09 09:50 |              | 337175-002    |
| MW-1 @ 25' | S      | Jul-01-09 10:00 |              | 337175-003    |
| MW-1 @ 35' | S      | Jul-01-09 10:20 |              | 337175-004    |
| MW-1 @ 45' | S      | Jul-01-09 10:45 |              | 337175-005    |
| MW-1 @ 50' | S      | Jul-01-09 11:15 |              | 337175-006    |
| MW-1 @ 55' | S      | Jul-01-09 12:05 |              | 337175-007    |
| SB-2 @ 5'  | S      | Jul-01-09 13:10 |              | 337175-008    |
| SB-2 @ 15' | S      | Jul-01-09 13:40 |              | 337175-009    |
| SB-2 @ 25' | S      | Jul-01-09 14:10 |              | 337175-010    |
| SB-2 @ 35' | S      | Jul-01-09 14:35 |              | 337175-011    |
| SB-2 @ 45' | S      | Jul-01-09 15:10 |              | 337175-012    |
| SB-2 @ 50' | S      | Jul-01-09 15:40 |              | 337175-013    |
| SB-2 @ 55' | S      | Jul-01-09 16:10 |              | 337175-014    |
| SB-3 @ 5'  | S      | Jul-02-09 09:50 |              | 337175-015    |
| SB-3 @ 15' | S      | Jul-02-09 10:15 |              | 337175-016    |
| SB-3 @ 25' | S      | Jul-02-09 10:35 |              | 337175-017    |
| SB-3 @ 35' | S      | Jul-02-09 11:05 |              | 337175-018    |
| SB-3 @ 45' | S      | Jul-02-09 11:30 |              | 337175-019    |
| SB-3 @ 50' | S      | Jul-02-09 11:55 |              | 337175-020    |
| SB-3 @ 55' | S      | Jul-02-09 12:25 |              | 337175-021    |





## CASE NARRATIVE

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

**Project Name:** 14-Inch Vac to Jal- Legacy

**Project ID:** 2009-092

**Work Order Number:** 337175

**Report Date:** 03-AUG-09

**Date Received:** 07/06/2009

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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-764625 Percent Moisture

None

**Batch:** LBA-764626 Percent Moisture

None

**Batch:** LBA-764775 TX1005

None

**Batch:** LBA-764777 TPH by SW8015 Mod

None

**Batch:** LBA-765019 BTEX-MTBE EPA 8021B

SW8021BM

Batch 765019, 4-Bromofluorobenzene recovered below QC limits Sample Data not confirmed by re-analysis. Samples affected are: 533394-1-BLK, 337175-002, 337175-001.

4-Bromofluorobenzene recovered above QC limits Data not confirmed by re-analysis. Samples affected are: 337175-003, 337175-002, 337175-001, 337025-001 S, 337025-001 SD, and 533394-1-BKS

SW8021BM

Batch 765019, Toluene recovered below QC limits in the Matrix Spike.

Samples affected are: 337175-001, -002, -003.

The Laboratory Control Sample for Toluene is within laboratory Control Limits



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: 14-Inch Vac to Jal- Legacy*

*Project ID: 2009-092*

*Work Order Number: 337175*

*Report Date: 03-AUG-09*

*Date Received: 07/06/2009*

---

*Batch: LBA-765081 BTEX-MTBE EPA 8021B*

*SW8021BM*

*Batch 765081: 4-Bromofluorobenzene recovered above QC limits. QC Data not confirmed by re-analysis. Samples affected are: 337175-021, 337175-007.*

*1,4-Difluorobenzene recovered below QC limits. QC Data not confirmed by re-analysis. Samples affected are: 337175-019, 337175-020, 337175-021, 337175-011.*

*Matrix interferences is suspected.*

*Batch: LBA-765200 BTEX-MTBE EPA 8021B*

*SW8021BM*

*Batch 765200, Benzene, Toluene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.*

*Samples affected are: 337175-013, -005, -006, -010, -014.*

*The Laboratory Control Sample for Toluene, Benzene is within laboratory Control Limits*

*SW8021BM*

*Batch 765200, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 533475-1-BLK.*

*4-Bromofluorobenzene recovered above QC limits Data not confirmed by re-analysis. Samples affected are: 337713-006 S and 337713-006 SD, 337175-006, 337175-005, 337175-010*



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: 14-Inch Vac to Jal- Legacy*

*Project ID: 2009-092*

*Work Order Number: 337175*

*Report Date: 03-AUG-09*

*Date Received: 07/06/2009*

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*Batch: LBA-765231 BTEX-MTBE EPA 8021B  
SW8021BM*

*Batch 765231, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis*

*Samples affected are: 337175-015.*

*4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 533520-1-BLK.*

*1,4-Difluorobenzene recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis*

*Samples affected are: 337175-009.*

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

*Samples affected are: 337719-001 S,337175-004,337175-015. QC data not confirmed by reanalysis.*

*SW8021BM*

*Batch 765231, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Benzene recovered below QC limits in the Matrix Spike Duplicate.*

*Samples affected are: 337175-004, -009, -015.*

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

*SW8021BM*

*Batch 765231, Ethylbenzene, m,p-Xylenes , o-Xylene RPD was outside QC limits; is reportable as LCS is passing.*

*Samples affected are: 337175-004, -009, -015*



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: 14-Inch Vac to Jal- Legacy*

*Project ID: 2009-092*

*Work Order Number: 337175*

*Report Date: 03-AUG-09*

*Date Received: 07/06/2009*

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*Batch: LBA-765323 BTEX-MTBE EPA 8021B  
SW8021BM*

*Batch 765323, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike Duplicate.*

*Samples affected are: 337175-012, -016, -017, -008.*

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

*SW8021BM*

*Batch 765323, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 533559-1-BLK.*

*4-Bromofluorobenzene recovered above QC limits Data not confirmed by re-analysis. Samples affected are: 533559-1-BKS, 533559-1-BSD, 337175-012S, 337175-012SD*

*4-Bromofluorobenzene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 337175-016 and -008*

*Batch: LBA-767305 Inorganic Anions by EPA 300  
None*

*Batch: LBA-767307 Inorganic Anions by EPA 300  
None*



# Certificate of Analysis Summary 337175

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14-Inch Vac to Jal- Legacy

Date Received in Lab: Mon Jul-06-09 12:35 pm

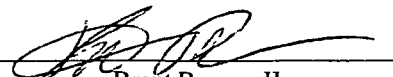
Report Date: 03-AUG-09

Project Manager: Brent Barron, II

| Analysis Requested                 | Lab Id:    | 337175-001      | 337175-002      | 337175-003      | 337175-004      | 337175-005      | 337175-006      |
|------------------------------------|------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                                    | Field Id:  | MW-1 @ 5'       | MW-1 @ 15'      | MW-1 @ 25'      | MW-1 @ 35'      | MW-1 @ 45'      | MW-1 @ 50'      |
|                                    | Depth:     |                 |                 |                 |                 |                 |                 |
|                                    | Matrix:    | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            |
|                                    | Sampled:   | Jul-01-09 09:30 | Jul-01-09 09:50 | Jul-01-09 10:00 | Jul-01-09 10:20 | Jul-01-09 10:45 | Jul-01-09 11:15 |
| Anions by EPA 300                  | Extracted: |                 |                 |                 |                 |                 |                 |
|                                    | Analyzed:  | Jul-31-09 07:55 | Jul-31-09 07:55 | Jul-31-09 07:55 | Jul-31-09 07:55 | Jul-31-09 07:55 | Jul-31-09 07:55 |
|                                    | Units/RL:  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |
| Chloride                           |            | 53.4 6.11       | 23.0 6.77       | 10.3 5.41       | 12.5 5.39       | 22.1 5.14       | 19.6 5.22       |
| BTEX by EPA 8021B                  | Extracted: | Jul-09-09 17:00 | Jul-09-09 17:00 | Jul-09-09 17:00 | Jul-11-09 11:15 | Jul-11-09 10:00 | Jul-11-09 10:00 |
|                                    | Analyzed:  | Jul-10-09 01:26 | Jul-10-09 02:09 | Jul-10-09 07:30 | Jul-13-09 10:08 | Jul-12-09 15:37 | Jul-12-09 15:18 |
|                                    | Units/RL:  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |
| Benzene                            |            | 1.447 0.0611    | 1.197 0.0338    | 0.5279 0.1082   | 0.5556 0.2697   | ND 0.0010       | ND 0.0010       |
| Toluene                            |            | 13.56 0.1222    | 12.27 0.0677    | 18.58 0.2163    | 10.74 0.5394    | 0.0127 0.0021   | ND 0.0021       |
| Ethylbenzene                       |            | 10.15 0.0611    | 8.475 0.0338    | 18.72 0.1082    | 17.45 0.2697    | 0.0642 0.0010   | ND 0.0010       |
| m,p-Xylenes                        |            | 14.23 0.1222    | 12.21 0.0677    | 29.75 0.2163    | 30.49 0.5394    | 0.1268 0.0021   | 0.0025 0.0021   |
| o-Xylene                           |            | 6.562 0.0611    | 5.658 0.0338    | 11.92 0.1082    | 11.55 0.2697    | 0.0578 0.0010   | ND 0.0010       |
| Total Xylenes                      |            | 20.792 0.0611   | 17.868 0.0338   | 41.67 0.1082    | 42.04 0.2697    | 0.1846 0.0010   | 0.0025 0.0010   |
| Total BTEX                         |            | 45.949 0.0611   | 39.81 0.0338    | 79.4979 0.1082  | 70.7856 0.2697  | 0.2615 0.0010   | 0.0025 0.0010   |
| TPH By SW8015 Mod                  | Extracted: | Jul-07-09 12:24 | Jul-07-09 12:24 | Jul-07-09 12:24 | Jul-07-09 12:24 | Jul-07-09 12:24 | Jul-07-09 12:24 |
|                                    | Analyzed:  | Jul-07-09 18:57 | Jul-07-09 19:22 | Jul-07-09 19:47 | Jul-07-09 20:12 | Jul-07-09 20:37 | Jul-07-09 21:02 |
|                                    | Units/RL:  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |
| C6-C12 Gasoline Range Hydrocarbons |            | 731 183         | 551 101         | 1950 81.1       | 66.8 16.2       | 98.4 15.3       | 336 78.3        |
| C12-C28 Diesel Range Hydrocarbons  |            | 2310 183        | 1980 101        | 7270 81.1       | 827 16.2        | 1060 15.3       | 2910 78.3       |
| C28-C35 Oil Range Hydrocarbons     |            | ND 183          | 126 101         | 435 81.1        | 51.6 16.2       | 70.7 15.3       | 195 78.3        |
| Total TPH                          |            | 3041 183        | 2657 101        | 9655 81.1       | 945.4 16.2      | 1229.1 15.3     | 3441 78.3       |

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

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

  
Brent Barron, II  
Odessa Laboratory Manager



# Certificate of Analysis Summary 337175

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14-Inch Vac to Jal- Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Mon Jul-06-09 12:35 pm


Report Date: 03-AUG-09

Project Manager: Brent Barron, II

| Analysis Requested | Lab Id:    | 337175-001      | 337175-002      | 337175-003      | 337175-004      | 337175-005      | 337175-006      |
|--------------------|------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                    | Field Id:  | MW-1 @ 5'       | MW-1 @ 15'      | MW-1 @ 25'      | MW-1 @ 35'      | MW-1 @ 45'      | MW-1 @ 50'      |
|                    | Depth:     |                 |                 |                 |                 |                 |                 |
|                    | Matrix:    | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            |
|                    | Sampled:   | Jul-01-09 09:30 | Jul-01-09 09:50 | Jul-01-09 10:00 | Jul-01-09 10:20 | Jul-01-09 10:45 | Jul-01-09 11:15 |
| Percent Moisture   | Extracted: | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 |
|                    | Analyzed:  | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 |
|                    | Units/RL:  | % RL            | % RL            | % RL            | % RL            | % RL            | % RL            |
| Percent Moisture   |            | 18.20 1.00      | 26.12 1.00      | 7.55 1.00       | 7.30 1.00       | 2.63 1.00       | 4.21 1.00       |

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

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

  
Brent Barron, II  
Odessa Laboratory Manager



# Certificate of Analysis Summary 337175

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14-Inch Vac to Jal- Legacy

Date Received in Lab: Mon Jul-06-09 12:35 pm


Report Date: 03-AUG-09

Project Manager: Brent Barron, II

|                                    |                   |                 |                 |                 |                 |                 |                 |
|------------------------------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <b>Analysis Requested</b>          | <b>Lab Id:</b>    | 337175-007      | 337175-008      | 337175-009      | 337175-010      | 337175-011      | 337175-012      |
|                                    | <b>Field Id:</b>  | MW-1 @ 55'      | SB-2 @ 5'       | SB-2 @ 15'      | SB-2 @ 25'      | SB-2 @ 35'      | SB-2 @ 45'      |
|                                    | <b>Depth:</b>     |                 |                 |                 |                 |                 |                 |
|                                    | <b>Matrix:</b>    | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            |
|                                    | <b>Sampled:</b>   | Jul-01-09 12:05 | Jul-01-09 13:10 | Jul-01-09 13:40 | Jul-01-09 14:10 | Jul-01-09 14:35 | Jul-01-09 15:10 |
| <b>Anions by EPA 300</b>           | <b>Extracted:</b> |                 |                 |                 |                 |                 |                 |
|                                    | <b>Analyzed:</b>  | Jul-31-09 07:55 | Jul-31-09 07:55 | Jul-31-09 07:55 | Jul-31-09 07:55 | Jul-31-09 07:55 | Jul-31-09 07:55 |
|                                    | <b>Units/RL:</b>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |
| Chloride                           |                   | 179 10.5        | 47.7 5.58       | 34.0 5.65       | 32.3 5.66       | ND 5.15         | 51.2 5.29       |
| <b>BTEX by EPA 8021B</b>           | <b>Extracted:</b> | Jul-09-09 17:00 | Jul-11-09 12:05 | Jul-11-09 11:15 | Jul-11-09 10:00 | Jul-09-09 17:00 | Jul-11-09 12:05 |
|                                    | <b>Analyzed:</b>  | Jul-10-09 13:18 | Jul-14-09 00:55 | Jul-13-09 08:35 | Jul-12-09 16:14 | Jul-10-09 13:39 | Jul-13-09 22:46 |
|                                    | <b>Units/RL:</b>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |
| Benzene                            |                   | ND 0.0011       | ND 0.0279       | 0.2671 0.0565   | ND 0.0011       | ND 0.0010       | ND 0.0011       |
| Toluene                            |                   | ND 0.0021       | 2.410 0.0558    | 4.984 0.1130    | ND 0.0023       | ND 0.0021       | ND 0.0021       |
| Ethylbenzene                       |                   | 0.0068 0.0011   | 7.296 0.0279    | 2.384 0.0565    | 0.0019 0.0011   | 0.0032 0.0010   | ND 0.0011       |
| m,p-Xylenes                        |                   | 0.0094 0.0021   | 11.59 0.0558    | 9.315 0.1130    | 0.0058 0.0023   | 0.0078 0.0021   | ND 0.0021       |
| o-Xylene                           |                   | 0.0083 0.0011   | 5.095 0.0279    | 3.829 0.0565    | 0.0032 0.0011   | 0.0035 0.0010   | ND 0.0011       |
| Total Xylenes                      |                   | 0.0177 0.0011   | 16.685 0.0279   | 13.144 0.0565   | 0.009 0.0011    | 0.0113 0.0010   | ND 0.0011       |
| Total BTEX                         |                   | 0.0245 0.0011   | 26.391 0.0279   | 20.7791 0.0565  | 0.0109 0.0011   | 0.0145 0.0010   | ND 0.0011       |
| <b>Percent Moisture</b>            | <b>Extracted:</b> |                 |                 |                 |                 |                 |                 |
|                                    | <b>Analyzed:</b>  | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 |
|                                    | <b>Units/RL:</b>  | % RL            | % RL            | % RL            | % RL            | % RL            | % RL            |
| Percent Moisture                   |                   | 4.84 1.00       | 10.46 1.00      | 11.47 1.00      | 11.60 1.00      | 2.83 1.00       | 5.47 1.00       |
| <b>TPH By SW8015 Mod</b>           | <b>Extracted:</b> | Jul-07-09 13:22 | Jul-07-09 13:22 | Jul-07-09 13:22 | Jul-07-09 13:22 | Jul-07-09 13:22 | Jul-07-09 13:22 |
|                                    | <b>Analyzed:</b>  | Jul-08-09 01:35 | Jul-08-09 02:01 | Jul-08-09 02:26 | Jul-08-09 02:52 | Jul-08-09 03:16 | Jul-08-09 03:41 |
|                                    | <b>Units/RL:</b>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |
| C6-C12 Gasoline Range Hydrocarbons |                   | 25.8 15.8       | 904 83.8        | 555 16.9        | 21.1 16.9       | ND 15.4         | 27.2 15.9       |
| C12-C28 Diesel Range Hydrocarbons  |                   | 392 15.8        | 3610 83.8       | 2210 16.9       | 196 16.9        | 57.8 15.4       | 261 15.9        |
| C28-C35 Oil Range Hydrocarbons     |                   | 27.6 15.8       | 141 83.8        | 107 16.9        | ND 16.9         | ND 15.4         | 20.2 15.9       |
| Total TPH                          |                   | 445.4 15.8      | 4655 83.8       | 2872 16.9       | 217.1 16.9      | 57.8 15.4       | 308.4 15.9      |

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Brent Barron, II  
Odessa Laboratory Manager



# Certificate of Analysis Summary 337175

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14-Inch Vac to Jal- Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Mon Jul-06-09 12:35 pm


Report Date: 03-AUG-09

Project Manager: Brent Barron, II

| <i>Analysis Requested</i>          | <i>Lab Id:</i>    | 337175-013      | 337175-014      | 337175-015      | 337175-016      | 337175-017      | 337175-018      |
|------------------------------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                                    | <i>Field Id:</i>  | SB-2 @ 50'      | SB-2 @ 55'      | SB-3 @ 5'       | SB-3 @ 15'      | SB-3 @ 25'      | SB-3 @ 35'      |
|                                    | <i>Depth:</i>     |                 |                 |                 |                 |                 |                 |
|                                    | <i>Matrix:</i>    | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            |
|                                    | <i>Sampled:</i>   | Jul-01-09 15:40 | Jul-01-09 16:10 | Jul-02-09 09:50 | Jul-02-09 10:15 | Jul-02-09 10:35 | Jul-02-09 11:05 |
| <b>Anions by EPA 300</b>           | <i>Extracted:</i> |                 |                 |                 |                 |                 |                 |
|                                    | <i>Analyzed:</i>  | Jul-31-09 07:55 | Jul-31-09 07:55 | Jul-31-09 07:55 | Jul-31-09 07:55 | Jul-31-09 13:25 | Jul-31-09 13:25 |
|                                    | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |
| Chloride                           |                   | 471 10.7        | 952 22.4        | 152 10.6        | 73.0 5.43       | 54.4 5.53       | 24.8 5.19       |
| <b>BTEX by EPA 8021B</b>           | <i>Extracted:</i> | Jul-11-09 10:00 | Jul-11-09 10:00 | Jul-11-09 11:15 | Jul-11-09 12:05 | Jul-11-09 12:05 | Jul-09-09 17:00 |
|                                    | <i>Analyzed:</i>  | Jul-12-09 12:50 | Jul-12-09 15:55 | Jul-13-09 09:31 | Jul-14-09 01:13 | Jul-14-09 02:26 | Jul-10-09 11:30 |
|                                    | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |
| Benzene                            |                   | ND 0.0011       | ND 0.0011       | 0.0644 0.0528   | ND 0.0272       | ND 0.5530       | ND 0.0010       |
| Toluene                            |                   | ND 0.0021       | ND 0.0022       | 1.411 0.1055    | 0.6387 0.0543   | 2.969 1.106     | ND 0.0021       |
| Ethylbenzene                       |                   | ND 0.0011       | ND 0.0011       | 1.604 0.0528    | 2.621 0.0272    | 4.529 0.5530    | ND 0.0010       |
| m,p-Xylenes                        |                   | ND 0.0021       | ND 0.0022       | 2.708 0.1055    | 4.548 0.0543    | 7.355 1.106     | ND 0.0021       |
| o-Xylene                           |                   | ND 0.0011       | ND 0.0011       | 0.9809 0.0528   | 1.919 0.0272    | 2.875 0.5530    | ND 0.0010       |
| Total Xylenes                      |                   | ND 0.0011       | ND 0.0011       | 3.6889 0.0528   | 6.467 0.0272    | 10.23 0.5530    | ND 0.0010       |
| Total BTEX                         |                   | ND 0.0011       | ND 0.0011       | 6.7683 0.0528   | 9.7267 0.0272   | 17.728 0.5530   | ND 0.0010       |
| <b>Percent Moisture</b>            | <i>Extracted:</i> |                 |                 |                 |                 |                 |                 |
|                                    | <i>Analyzed:</i>  | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 |
|                                    | <i>Units/RL:</i>  | % RL            | % RL            | % RL            | % RL            | % RL            | % RL            |
| Percent Moisture                   |                   | 6.52 1.00       | 10.91 1.00      | 5.24 1.00       | 7.94 1.00       | 9.58 1.00       | 3.61 1.00       |
| <b>TPH By SW8015 Mod</b>           | <i>Extracted:</i> | Jul-07-09 13:22 | Jul-07-09 13:22 | Jul-07-09 13:22 | Jul-07-09 13:22 | Jul-07-09 13:22 | Jul-07-09 13:22 |
|                                    | <i>Analyzed:</i>  | Jul-08-09 04:06 | Jul-08-09 04:30 | Jul-08-09 04:55 | Jul-08-09 05:20 | Jul-08-09 06:10 | Jul-08-09 06:35 |
|                                    | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |
| C6-C12 Gasoline Range Hydrocarbons |                   | 19.6 16.0       | 16.8 16.8       | 1550 79.0       | 477 81.3        | 887 82.9        | ND 15.6         |
| C12-C28 Diesel Range Hydrocarbons  |                   | 105 16.0        | 86.8 16.8       | 4450 79.0       | 2660 81.3       | 4560 82.9       | 103 15.6        |
| C28-C35 Oil Range Hydrocarbons     |                   | ND 16.0         | ND 16.8         | 226 79.0        | 155 81.3        | 268 82.9        | ND 15.6         |
| Total TPH                          |                   | 124.6 16.0      | 103.6 16.8      | 6226 79.0       | 3292 81.3       | 5715 82.9       | 103 15.6        |

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Odessa Laboratory Manager





# Certificate of Analysis Summary 337175

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



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14-Inch Vac to Jal- Legacy

Date Received in Lab: Mon Jul-06-09 12:35 pm


Report Date: 03-AUG-09

Project Manager: Brent Barron, II

|                           |                                    |                 |                 |                 |  |  |  |
|---------------------------|------------------------------------|-----------------|-----------------|-----------------|--|--|--|
| <b>Analysis Requested</b> | <b>Lab Id:</b>                     | 337175-019      | 337175-020      | 337175-021      |  |  |  |
|                           | <b>Field Id:</b>                   | SB-3 @ 45'      | SB-3 @ 50'      | SB-3 @ 55'      |  |  |  |
|                           | <b>Depth:</b>                      |                 |                 |                 |  |  |  |
|                           | <b>Matrix:</b>                     | SOIL            | SOIL            | SOIL            |  |  |  |
|                           | <b>Sampled:</b>                    | Jul-02-09 11:30 | Jul-02-09 11:55 | Jul-02-09 12:25 |  |  |  |
| <b>Anions by EPA 300</b>  | <b>Extracted:</b>                  |                 |                 |                 |  |  |  |
|                           | <b>Analyzed:</b>                   | Jul-31-09 13:25 | Jul-31-09 13:25 | Jul-31-09 13:25 |  |  |  |
|                           | <b>Units/RL:</b>                   | mg/kg RL        | mg/kg RL        | mg/kg RL        |  |  |  |
|                           | Chloride                           | 17.2 5.13       | 8.94 5.12       | 24.1 5.14       |  |  |  |
| <b>BTEX by EPA 8021B</b>  | <b>Extracted:</b>                  | Jul-09-09 17:00 | Jul-09-09 17:00 | Jul-09-09 17:00 |  |  |  |
|                           | <b>Analyzed:</b>                   | Jul-10-09 11:52 | Jul-10-09 12:13 | Jul-10-09 12:35 |  |  |  |
|                           | <b>Units/RL:</b>                   | mg/kg RL        | mg/kg RL        | mg/kg RL        |  |  |  |
|                           | Benzene                            | ND 0.0010       | ND 0.0010       | ND 0.0010       |  |  |  |
|                           | Toluene                            | ND 0.0021       | ND 0.0020       | 0.0035 0.0021   |  |  |  |
|                           | Ethylbenzene                       | 0.0023 0.0010   | 0.0015 0.0010   | 0.0142 0.0010   |  |  |  |
|                           | m,p-Xylenes                        | 0.0054 0.0021   | 0.0035 0.0020   | 0.0305 0.0021   |  |  |  |
|                           | o-Xylene                           | 0.0028 0.0010   | 0.0018 0.0010   | 0.0137 0.0010   |  |  |  |
|                           | Total Xylenes                      | 0.0082 0.0010   | 0.0053 0.0010   | 0.0442 0.0010   |  |  |  |
|                           | Total BTEX                         | 0.0105 0.0010   | 0.0068 0.0010   | 0.0619 0.0010   |  |  |  |
| <b>Percent Moisture</b>   | <b>Extracted:</b>                  |                 |                 |                 |  |  |  |
|                           | <b>Analyzed:</b>                   | Jul-06-09 12:45 | Jul-06-09 12:45 | Jul-06-09 12:45 |  |  |  |
|                           | <b>Units/RL:</b>                   | % RL            | % RL            | % RL            |  |  |  |
|                           | Percent Moisture                   | 2.58 1.00       | 2.27 1.00       | 2.65 1.00       |  |  |  |
| <b>TPH By SW8015 Mod</b>  | <b>Extracted:</b>                  | Jul-07-09 13:22 | Jul-07-09 13:22 | Jul-07-09 13:22 |  |  |  |
|                           | <b>Analyzed:</b>                   | Jul-08-09 06:59 | Jul-08-09 07:24 | Jul-08-09 07:48 |  |  |  |
|                           | <b>Units/RL:</b>                   | mg/kg RL        | mg/kg RL        | mg/kg RL        |  |  |  |
|                           | C6-C12 Gasoline Range Hydrocarbons | 17.3 15.3       | ND 15.3         | 23.3 15.4       |  |  |  |
|                           | C12-C28 Diesel Range Hydrocarbons  | 113 15.3        | 72.2 15.3       | 159 15.4        |  |  |  |
|                           | C28-C35 Oil Range Hydrocarbons     | 18.0 15.3       | ND 15.3         | 18.2 15.4       |  |  |  |
|                           | Total TPH                          | 148.3 15.3      | 72.2 15.3       | 200.5 15.4      |  |  |  |

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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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## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,

Project ID: 2009-092

Lab Batch #: 765019

Sample: 533394-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/09/09 22:13

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0300              | 0.0300             | 100                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0370              | 0.0300             | 123                   | 80-120               | **    |

Lab Batch #: 765019

Sample: 533394-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/09/09 22:34

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0304              | 0.0300             | 101                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0348              | 0.0300             | 116                   | 80-120               |       |

Lab Batch #: 765019

Sample: 533394-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/09/09 23:17

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0265              | 0.0300             | 88                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0127              | 0.0300             | 42                    | 80-120               | **    |

Lab Batch #: 765019

Sample: 337175-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 01:26

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0256              | 0.0300             | 85                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0517              | 0.0300             | 172                   | 80-120               | *     |

Lab Batch #: 765019

Sample: 337175-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 02:09

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0242              | 0.0300             | 81                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0556              | 0.0300             | 185                   | 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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,

Lab Batch #: 765019

Sample: 337175-003 / SMP

Project ID: 2009-092

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 07:30

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0270           | 0.0300          | 90              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0530           | 0.0300          | 177             | 80-120            | *     |

Lab Batch #: 765019

Sample: 337025-001 S / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 08:17

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0308           | 0.0300          | 103             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0397           | 0.0300          | 132             | 80-120            | **    |

Lab Batch #: 765019

Sample: 337025-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 08:39

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0304           | 0.0300          | 101             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0368           | 0.0300          | 123             | 80-120            | **    |

Lab Batch #: 765081

Sample: 533433-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/10/09 09:22

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0304           | 0.0300          | 101             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0366           | 0.0300          | 122             | 80-120            | *     |

Lab Batch #: 765081

Sample: 533433-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/10/09 09:43

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0305           | 0.0300          | 102             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0361           | 0.0300          | 120             | 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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,

Project ID: 2009-092

Lab Batch #: 765081

Sample: 533433-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/10/09 10:26

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0264              | 0.0300             | 88                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0294              | 0.0300             | 98                    | 80-120               |       |

Lab Batch #: 765081

Sample: 337175-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 11:30

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0263              | 0.0300             | 88                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0307              | 0.0300             | 102                   | 80-120               |       |

Lab Batch #: 765081

Sample: 337175-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 11:52

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0235              | 0.0300             | 78                    | 80-120               | *     |
| 4-Bromofluorobenzene          | 0.0342              | 0.0300             | 114                   | 80-120               |       |

Lab Batch #: 765081

Sample: 337175-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 12:13

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0237              | 0.0300             | 79                    | 80-120               | *     |
| 4-Bromofluorobenzene          | 0.0304              | 0.0300             | 101                   | 80-120               |       |

Lab Batch #: 765081

Sample: 337175-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 12:35

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0236              | 0.0300             | 79                    | 80-120               | *     |
| 4-Bromofluorobenzene          | 0.0389              | 0.0300             | 130                   | 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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,

Lab Batch #: 765081

Sample: 337175-007 / SMP

Project ID: 2009-092

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 13:18

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0254           | 0.0300          | 85              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0368           | 0.0300          | 123             | 80-120            | *     |

Lab Batch #: 765081

Sample: 337175-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 13:39

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0233           | 0.0300          | 78              | 80-120            | *     |
| 4-Bromofluorobenzene | 0.0346           | 0.0300          | 115             | 80-120            |       |

Lab Batch #: 765200

Sample: 533475-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/12/09 08:45

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0312           | 0.0300          | 104             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0356           | 0.0300          | 119             | 80-120            |       |

Lab Batch #: 765200

Sample: 533475-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/12/09 09:46

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0280           | 0.0300          | 93              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0155           | 0.0300          | 52              | 80-120            | **    |

Lab Batch #: 765200

Sample: 337175-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/12/09 12:50

## 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 | 0.0353           | 0.0300          | 118             | 80-120            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,

Project ID: 2009-092

Lab Batch #: 765200

Sample: 337175-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/12/09 15:18

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0262           | 0.0300          | 87              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0443           | 0.0300          | 148             | 80-120            | *     |

Lab Batch #: 765200

Sample: 337175-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/12/09 15:37

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0248           | 0.0300          | 83              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0603           | 0.0300          | 201             | 80-120            | *     |

Lab Batch #: 765200

Sample: 337175-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/12/09 15:55

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0262           | 0.0300          | 87              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0334           | 0.0300          | 111             | 80-120            |       |

Lab Batch #: 765200

Sample: 337175-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/12/09 16:14

### 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 | 0.0419           | 0.0300          | 140             | 80-120            | *     |

Lab Batch #: 765200

Sample: 337713-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/12/09 16:50

### 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 | 0.0403           | 0.0300          | 134             | 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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,

Project ID: 2009-092

Lab Batch #: 765200

Sample: 337713-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/12/09 17:09

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0316           | 0.0300          | 105             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0384           | 0.0300          | 128             | 80-120            | *     |

Lab Batch #: 765231

Sample: 533520-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/13/09 02:42

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0313           | 0.0300          | 104             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0350           | 0.0300          | 117             | 80-120            |       |

Lab Batch #: 765231

Sample: 533520-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/13/09 03:00

### 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 | 0.0347           | 0.0300          | 116             | 80-120            |       |

Lab Batch #: 765231

Sample: 533520-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/13/09 03:36

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0279           | 0.0300          | 93              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0159           | 0.0300          | 53              | 80-120            | *     |

Lab Batch #: 765231

Sample: 337175-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/13/09 08:35

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0380           | 0.0300          | 127             | 80-120            | **    |
| 4-Bromofluorobenzene | 0.0361           | 0.0300          | 120             | 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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,

Project ID: 2009-092

Lab Batch #: 765231

Sample: 337175-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/13/09 09:31

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0234              | 0.0300             | 78                    | 80-120               | **    |
| 4-Bromofluorobenzene          | 0.0424              | 0.0300             | 141                   | 80-120               | **    |

Lab Batch #: 765231

Sample: 337175-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/13/09 10:08

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0245              | 0.0300             | 82                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0507              | 0.0300             | 169                   | 80-120               | **    |

Lab Batch #: 765231

Sample: 337719-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/13/09 10:44

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0315              | 0.0300             | 105                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0362              | 0.0300             | 121                   | 80-120               | *     |

Lab Batch #: 765231

Sample: 337719-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/13/09 11:03

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0316              | 0.0300             | 105                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0312              | 0.0300             | 104                   | 80-120               |       |

Lab Batch #: 765323

Sample: 533559-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/13/09 21:32

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0316              | 0.0300             | 105                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0368              | 0.0300             | 123                   | 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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,

Project ID: 2009-092

Lab Batch #: 765323

Sample: 533559-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/13/09 21:50

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0316              | 0.0300             | 105                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0362              | 0.0300             | 121                   | 80-120               | *     |

Lab Batch #: 765323

Sample: 533559-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/13/09 22:27

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0280              | 0.0300             | 93                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0164              | 0.0300             | 55                    | 80-120               | *     |

Lab Batch #: 765323

Sample: 337175-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/13/09 22:46

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0268              | 0.0300             | 89                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0330              | 0.0300             | 110                   | 80-120               |       |

Lab Batch #: 765323

Sample: 337175-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/14/09 00:55

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0246              | 0.0300             | 82                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0675              | 0.0300             | 225                   | 80-120               | **    |

Lab Batch #: 765323

Sample: 337175-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/14/09 01:13

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0245              | 0.0300             | 82                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0532              | 0.0300             | 177                   | 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: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,

Project ID: 2009-092

Lab Batch #: 765323

Sample: 337175-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/14/09 02:26

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0254           | 0.0300          | 85              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0341           | 0.0300          | 114             | 80-120            |       |

Lab Batch #: 765323

Sample: 337175-012 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/14/09 05:31

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0314           | 0.0300          | 105             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0393           | 0.0300          | 131             | 80-120            | *     |

Lab Batch #: 765323

Sample: 337175-012 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/14/09 07:37

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0322           | 0.0300          | 107             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0383           | 0.0300          | 128             | 80-120            | *     |

Lab Batch #: 764775

Sample: 533254-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/07/09 11:21

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 111              | 100             | 111             | 70-135            |       |
| o-Terphenyl       | 43.9             | 50.0            | 88              | 70-135            |       |

Lab Batch #: 764775

Sample: 533254-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/07/09 11:46

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 107              | 100             | 107             | 70-135            |       |
| o-Terphenyl       | 41.4             | 50.0            | 83              | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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

## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,

Project ID: 2009-092

Lab Batch #: 764775

Sample: 533254-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/07/09 12:12

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| Analytes          |                     |                    |                       |                      |       |
| 1-Chlorooctane    | 96.0                | 100                | 96                    | 70-135               |       |
| o-Terphenyl       | 45.3                | 50.0               | 91                    | 70-135               |       |

Lab Batch #: 764775

Sample: 337175-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/07/09 18:57

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| Analytes          |                     |                    |                       |                      |       |
| 1-Chlorooctane    | 95.9                | 100                | 96                    | 70-135               |       |
| o-Terphenyl       | 42.5                | 50.0               | 85                    | 70-135               |       |

Lab Batch #: 764775

Sample: 337175-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/07/09 19:22

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| Analytes          |                     |                    |                       |                      |       |
| 1-Chlorooctane    | 103                 | 99.8               | 103                   | 70-135               |       |
| o-Terphenyl       | 48.2                | 49.9               | 97                    | 70-135               |       |

Lab Batch #: 764775

Sample: 337175-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/07/09 19:47

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| Analytes          |                     |                    |                       |                      |       |
| 1-Chlorooctane    | 130                 | 100                | 130                   | 70-135               |       |
| o-Terphenyl       | 51.7                | 50.0               | 103                   | 70-135               |       |

Lab Batch #: 764775

Sample: 337175-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/07/09 20:12

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| Analytes          |                     |                    |                       |                      |       |
| 1-Chlorooctane    | 104                 | 100                | 104                   | 70-135               |       |
| o-Terphenyl       | 51.8                | 50.0               | 104                   | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,

Project ID: 2009-092

Lab Batch #: 764775

Sample: 337175-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/07/09 20:37

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 103                 | 99.5               | 104                   | 70-135               |       |
| o-Terphenyl                   | 49.3                | 49.8               | 99                    | 70-135               |       |

Lab Batch #: 764775

Sample: 337175-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/07/09 21:02

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 99.6                | 100                | 100                   | 70-135               |       |
| o-Terphenyl                   | 48.0                | 50.0               | 96                    | 70-135               |       |

Lab Batch #: 764775

Sample: 337224-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/07/09 21:26

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 129                 | 100                | 129                   | 70-135               |       |
| o-Terphenyl                   | 51.9                | 50.0               | 104                   | 70-135               |       |

Lab Batch #: 764775

Sample: 337224-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/07/09 21:51

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 129                 | 99.9               | 129                   | 70-135               |       |
| o-Terphenyl                   | 47.5                | 50.0               | 95                    | 70-135               |       |

Lab Batch #: 764777

Sample: 533256-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/08/09 00:20

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 113                 | 100                | 113                   | 70-135               |       |
| o-Terphenyl                   | 45.0                | 50.0               | 90                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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

## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,

Project ID: 2009-092

Lab Batch #: 764777

Sample: 533256-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/08/09 00:45

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 118                 | 100                | 118                   | 70-135               |       |
| o-Terphenyl                   | 46.5                | 50.0               | 93                    | 70-135               |       |

Lab Batch #: 764777

Sample: 533256-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/08/09 01:11

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 99.8                | 100                | 100                   | 70-135               |       |
| o-Terphenyl                   | 49.0                | 50.0               | 98                    | 70-135               |       |

Lab Batch #: 764777

Sample: 337175-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 01:35

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 103                 | 100                | 103                   | 70-135               |       |
| o-Terphenyl                   | 49.8                | 50.0               | 100                   | 70-135               |       |

Lab Batch #: 764777

Sample: 337175-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 02:01

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 109                 | 100                | 109                   | 70-135               |       |
| o-Terphenyl                   | 47.0                | 50.0               | 94                    | 70-135               |       |

Lab Batch #: 764777

Sample: 337175-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 02:26

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 109                 | 100                | 109                   | 70-135               |       |
| o-Terphenyl                   | 51.1                | 50.0               | 102                   | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,

Project ID: 2009-092

Lab Batch #: 764777

Sample: 337175-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 02:52

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 94.0                | 99.7               | 94                    | 70-135               |       |
| o-Terphenyl                   | 44.5                | 49.9               | 89                    | 70-135               |       |

Lab Batch #: 764777

Sample: 337175-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 03:16

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 100                 | 99.9               | 100                   | 70-135               |       |
| o-Terphenyl                   | 47.6                | 50.0               | 95                    | 70-135               |       |

Lab Batch #: 764777

Sample: 337175-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 03:41

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 98.0                | 100                | 98                    | 70-135               |       |
| o-Terphenyl                   | 46.4                | 50.0               | 93                    | 70-135               |       |

Lab Batch #: 764777

Sample: 337175-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 04:06

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 103                 | 99.7               | 103                   | 70-135               |       |
| o-Terphenyl                   | 49.4                | 49.9               | 99                    | 70-135               |       |

Lab Batch #: 764777

Sample: 337175-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 04:30

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 98.5                | 100                | 99                    | 70-135               |       |
| o-Terphenyl                   | 47.7                | 50.0               | 95                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,

Project ID: 2009-092

Lab Batch #: 764777

Sample: 337175-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 04:55

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 113                 | 99.8               | 113                   | 70-135               |       |
| o-Terphenyl                   | 46.4                | 49.9               | 93                    | 70-135               |       |

Lab Batch #: 764777

Sample: 337175-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 05:20

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 102                 | 99.8               | 102                   | 70-135               |       |
| o-Terphenyl                   | 47.7                | 49.9               | 96                    | 70-135               |       |

Lab Batch #: 764777

Sample: 337175-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 06:10

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 111                 | 100                | 111                   | 70-135               |       |
| o-Terphenyl                   | 50.7                | 50.0               | 101                   | 70-135               |       |

Lab Batch #: 764777

Sample: 337175-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 06:35

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 101                 | 100                | 101                   | 70-135               |       |
| o-Terphenyl                   | 48.8                | 50.0               | 98                    | 70-135               |       |

Lab Batch #: 764777

Sample: 337175-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 06:59

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 99.8                | 99.5               | 100                   | 70-135               |       |
| o-Terphenyl                   | 48.0                | 49.8               | 96                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal- Legacy

Work Orders : 337175,

Project ID: 2009-092

Lab Batch #: 764777

Sample: 337175-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 07:24

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 98.3                | 100                | 98                    | 70-135               |       |
| o-Terphenyl                   | 46.6                | 50.0               | 93                    | 70-135               |       |

Lab Batch #: 764777

Sample: 337175-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 07:48

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 101                 | 100                | 101                   | 70-135               |       |
| o-Terphenyl                   | 48.9                | 50.0               | 98                    | 70-135               |       |

Lab Batch #: 764777

Sample: 337175-007 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 10:17

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 114                 | 100                | 114                   | 70-135               |       |
| o-Terphenyl                   | 46.5                | 50.0               | 93                    | 70-135               |       |

Lab Batch #: 764777

Sample: 337175-007 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 10:42

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 115                 | 100                | 115                   | 70-135               |       |
| o-Terphenyl                   | 47.7                | 50.0               | 95                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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

**Project Name: 14-Inch Vac to Jal- Legacy**

**Work Order #:** 337175

**Project ID:**

2009-092

**Lab Batch #:** 765200

**Sample:** 533475-1-BKS

**Matrix:** Solid

**Date Analyzed:** 07/12/2009

**Date Prepared:** 07/11/2009

**Analyst:** BRB

**Reporting Units:** mg/kg

**Batch #:** 1

## BLANK /BLANK SPIKE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Blank Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|------------------------|--------------------|-------------------|-------|
| Benzene                       | ND               | 0.1000          | 0.0928                 | 93                 | 70-130            |       |
| Toluene                       | ND               | 0.1000          | 0.0886                 | 89                 | 70-130            |       |
| Ethylbenzene                  | ND               | 0.1000          | 0.0979                 | 98                 | 71-129            |       |
| m,p-Xylenes                   | ND               | 0.2000          | 0.1979                 | 99                 | 70-135            |       |
| o-Xylene                      | ND               | 0.1000          | 0.0942                 | 94                 | 71-133            |       |

**Lab Batch #:** 767305

**Sample:** 767305-1-BKS

**Matrix:** Solid

**Date Analyzed:** 07/31/2009

**Date Prepared:** 07/31/2009

**Analyst:** LATCOR

**Reporting Units:** mg/kg

**Batch #:** 1

## BLANK /BLANK SPIKE RECOVERY STUDY

| Anions by EPA 300<br>Analytes | Blank Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|------------------------|--------------------|-------------------|-------|
| Chloride                      | ND               | 10.0            | 9.70                   | 97                 | 80-120            |       |

**Lab Batch #:** 767307

**Sample:** 767307-1-BKS

**Matrix:** Solid

**Date Analyzed:** 07/31/2009

**Date Prepared:** 07/31/2009

**Analyst:** LATCOR

**Reporting Units:** mg/kg

**Batch #:** 1

## BLANK /BLANK SPIKE RECOVERY STUDY

| Anions by EPA 300<br>Analytes | Blank Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|------------------------|--------------------|-------------------|-------|
| Chloride                      | ND               | 10.0            | 9.14                   | 91                 | 80-120            |       |

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

All results are based on MDL and validated for QC purposes

- Below Reporting Limit



## BS / BSD Recoveries



**Project Name: 14-Inch Vac to Jal- Legacy**

**Work Order #: 337175**

**Analyst: BRB**

**Date Prepared: 07/09/2009**

**Project ID: 2009-092**

**Date Analyzed: 07/09/2009**

**Lab Batch ID: 765019**

**Sample: 533394-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| <b>BTEX by EPA 8021B</b> | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|--------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>          |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| Benzene                  | ND                                     | 0.1000                         | 0.0776                                    | 78                                    | 0.1                            | 0.0799  | 80                                      | 3                | 70-130                           | 35                                 |             |
| Toluene                  | ND                                     | 0.1000                         | 0.0738                                    | 74                                    | 0.1                            | 0.0759  | 76                                      | 3                | 70-130                           | 35                                 |             |
| Ethylbenzene             | ND                                     | 0.1000                         | 0.0813                                    | 81                                    | 0.1                            | 0.0840  | 84                                      | 3                | 71-129                           | 35                                 |             |
| m,p-Xylenes              | ND                                     | 0.2000                         | 0.1665                                    | 83                                    | 0.2                            | 0.1716  | 86                                      | 3                | 70-135                           | 35                                 |             |
| o-Xylene                 | ND                                     | 0.1000                         | 0.0793                                    | 79                                    | 0.1                            | 0.0809  | 81                                      | 2                | 71-133                           | 35                                 |             |

**Analyst: BRB**

**Date Prepared: 07/09/2009**

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

**Lab Batch ID: 765081**

**Sample: 533433-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| <b>BTEX by EPA 8021B</b> | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|--------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>          |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| Benzene                  | ND                                     | 0.1000                         | 0.0787                                    | 79                                    | 0.1                            | 0.0802  | 80                                      | 2                | 70-130                           | 35                                 |             |
| Toluene                  | ND                                     | 0.1000                         | 0.0751                                    | 75                                    | 0.1                            | 0.0766  | 77                                      | 2                | 70-130                           | 35                                 |             |
| Ethylbenzene             | ND                                     | 0.1000                         | 0.0845                                    | 85                                    | 0.1                            | 0.0859  | 86                                      | 2                | 71-129                           | 35                                 |             |
| m,p-Xylenes              | ND                                     | 0.2000                         | 0.1724                                    | 86                                    | 0.2                            | 0.1751  | 88                                      | 2                | 70-135                           | 35                                 |             |
| o-Xylene                 | ND                                     | 0.1000                         | 0.0813                                    | 81                                    | 0.1                            | 0.0827  | 83                                      | 2                | 71-133                           | 35                                 |             |

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

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

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

All results are based on MDL and Validated for QC Purposes



## BS / BSD Recoveries



**Project Name: 14-Inch Vac to Jal- Legacy**

**Work Order #: 337175**

**Analyst: BRB**

**Date Prepared: 07/11/2009**

**Project ID: 2009-092**

**Date Analyzed: 07/13/2009**

**Lab Batch ID: 765231**

**Sample: 533520-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### 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 |
|-------------------|-------------------------|-----------------|------------------------|--------------------|-----------------|----------------------------------|----------------------|-------|-------------------|---------------------|------|
| <b>Analytes</b>   |                         |                 |                        |                    |                 |                                  |                      |       |                   |                     |      |
| Benzene           | ND                      | 0.1000          | 0.0896                 | 90                 | 0.1             | 0.0916                           | 92                   | 2     | 70-130            | 35                  |      |
| Toluene           | ND                      | 0.1000          | 0.0848                 | 85                 | 0.1             | 0.0868                           | 87                   | 2     | 70-130            | 35                  |      |
| Ethylbenzene      | ND                      | 0.1000          | 0.0941                 | 94                 | 0.1             | 0.0959                           | 96                   | 2     | 71-129            | 35                  |      |
| m,p-Xylenes       | ND                      | 0.2000          | 0.1876                 | 94                 | 0.2             | 0.1918                           | 96                   | 2     | 70-135            | 35                  |      |
| o-Xylene          | ND                      | 0.1000          | 0.0896                 | 90                 | 0.1             | 0.0912                           | 91                   | 2     | 71-133            | 35                  |      |

**Analyst: ASA**

**Date Prepared: 07/11/2009**

**Date Analyzed: 07/13/2009**

**Lab Batch ID: 765323**

**Sample: 533559-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### 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 |
|-------------------|-------------------------|-----------------|------------------------|--------------------|-----------------|----------------------------------|----------------------|-------|-------------------|---------------------|------|
| <b>Analytes</b>   |                         |                 |                        |                    |                 |                                  |                      |       |                   |                     |      |
| Benzene           | ND                      | 0.1000          | 0.0947                 | 95                 | 0.1             | 0.0932                           | 93                   | 2     | 70-130            | 35                  |      |
| Toluene           | ND                      | 0.1000          | 0.0912                 | 91                 | 0.1             | 0.0897                           | 90                   | 2     | 70-130            | 35                  |      |
| Ethylbenzene      | ND                      | 0.1000          | 0.1030                 | 103                | 0.1             | 0.1019                           | 102                  | 1     | 71-129            | 35                  |      |
| m,p-Xylenes       | ND                      | 0.2000          | 0.2103                 | 105                | 0.2             | 0.2056                           | 103                  | 2     | 70-135            | 35                  |      |
| o-Xylene          | ND                      | 0.1000          | 0.0982                 | 98                 | 0.1             | 0.0967                           | 97                   | 2     | 71-133            | 35                  |      |

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

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

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

All results are based on MDL and Validated for QC Purposes



## BS / BSD Recoveries



**Project Name: 14-Inch Vac to Jal- Legacy**

**Work Order #: 337175**

**Analyst: BHW**

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

**Project ID: 2009-092**

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

**Lab Batch ID: 764775**

**Sample: 533254-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| TPH By SW8015 Mod                  | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes                           |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| C6-C12 Gasoline Range Hydrocarbons | ND                            | 1000                  | 865                             | 87                          | 1000                  | 842                                       | 84                            | 3        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | ND                            | 1000                  | 1020                            | 102                         | 1000                  | 970                                       | 97                            | 5        | 70-135                  | 35                        |      |

**Analyst: BHW**

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

**Date Analyzed: 07/08/2009**

**Lab Batch ID: 764777**

**Sample: 533256-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| TPH By SW8015 Mod                  | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes                           |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| C6-C12 Gasoline Range Hydrocarbons | ND                            | 1000                  | 870                             | 87                          | 1000                  | 916                                       | 92                            | 5        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | ND                            | 1000                  | 1030                            | 103                         | 1000                  | 1070                                      | 107                           | 4        | 70-135                  | 35                        |      |

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

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

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

All results are based on MDL and Validated for QC Purposes



# Form 3 - MS Recoveries



Project Name: 14-Inch Vac to Jal- Legacy

Work Order #: 337175

Lab Batch #: 767305

Date Analyzed: 07/31/2009

QC- Sample ID: 339247-001 S

Reporting Units: mg/kg

Project ID: 2009-092

Analyst: LATCOR

Date Prepared: 07/31/2009

Batch #: 1

Matrix: Soil

| MATRIX / MATRIX SPIKE RECOVERY STUDY |                          |                 |                          |        |                   |      |
|--------------------------------------|--------------------------|-----------------|--------------------------|--------|-------------------|------|
| Inorganic Anions by EPA 300          | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | %R [D] | Control Limits %R | Flag |
| Analytes                             |                          |                 |                          |        |                   |      |
| Chloride                             | 157                      | 212             | 386                      | 108    | 80-120            |      |

Lab Batch #: 767307

Date Analyzed: 07/31/2009

QC- Sample ID: 337175-017 S

Reporting Units: mg/kg

Date Prepared: 07/31/2009

Analyst: LATCOR

Batch #: 1

Matrix: Soil

| MATRIX / MATRIX SPIKE RECOVERY STUDY |                          |                 |                          |        |                   |      |
|--------------------------------------|--------------------------|-----------------|--------------------------|--------|-------------------|------|
| Inorganic Anions by EPA 300          | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | %R [D] | Control Limits %R | Flag |
| Analytes                             |                          |                 |                          |        |                   |      |
| Chloride                             | 54.4                     | 111             | 158                      | 93     | 80-120            |      |

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

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

All Results are based on MDL and Validated for QC Purposes

- Below Reporting Limit



## Form 3 - MS / MSD Recoveries

Project Name: 14-Inch Vac to Jal- Legacy



Work Order #: 337175

Project ID: 2009-092

Lab Batch ID: 765019

QC- Sample ID: 337025-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/10/2009

Date Prepared: 07/09/2009

Analyst: BRB

Reporting Units: mg/kg

| MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
|--|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| BTEX by EPA 8021B<br>Analytes                        | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
| Benzene  | ND                                | 0.1006                | 0.0715                         | 71                            | 0.1006                | 0.0767                                   | 76                          | 7        | 70-130                  | 35                        |      |
| Toluene  | ND                                | 0.1006                | 0.0692                         | 69                            | 0.1006                | 0.0731                                   | 73                          | 5        | 70-130                  | 35                        | X    |
| Ethylbenzene   | ND                                | 0.1006                | 0.0781                         | 78                            | 0.1006                | 0.0807                                   | 80                          | 3        | 71-129                  | 35                        |      |
| m,p-Xylenes  | ND                                | 0.2012                | 0.1601                         | 80                            | 0.2012                | 0.1638                                   | 81                          | 2        | 70-135                  | 35                        |      |
| o-Xylene   | ND                                | 0.1006                | 0.0751                         | 75                            | 0.1006                | 0.0770                                   | 77                          | 2        | 71-133                  | 35                        |      |

Lab Batch ID: 765200

QC- Sample ID: 337713-006 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/12/2009

Date Prepared: 07/11/2009

Analyst: BRB

Reporting Units: mg/kg

| MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
|--|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| BTEX by EPA 8021B<br>Analytes                        | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
| Benzene  | ND                                | 0.1123                | 0.0720                         | 64                            | 0.1123                | 0.0742                                   | 66                          | 3        | 70-130                  | 35                        | X    |
| Toluene  | ND                                | 0.1123                | 0.0765                         | 68                            | 0.1123                | 0.0779                                   | 69                          | 2        | 70-130                  | 35                        | X    |
| Ethylbenzene   | ND                                | 0.1123                | 0.0867                         | 77                            | 0.1123                | 0.0866                                   | 77                          | 0        | 71-129                  | 35                        |      |
| m,p-Xylenes  | ND                                | 0.2247                | 0.1789                         | 80                            | 0.2247                | 0.1776                                   | 79                          | 1        | 70-135                  | 35                        |      |
| o-Xylene   | ND                                | 0.1123                | 0.0850                         | 76                            | 0.1123                | 0.0840                                   | 75                          | 1        | 71-133                  | 35                        |      |

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

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

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



# Form 3 - M MSD Recoveries



Project Name: 14-Inch Vac to Jal- Legacy

Work Order #: 337175

Project ID: 2009-092

Lab Batch ID: 765231

QC- Sample ID: 337719-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/13/2009

Date Prepared: 07/11/2009

Analyst: BRB

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|-------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| Benzene                       | ND                                | 0.1025                | 0.0713                         | 70                            | 0.1025                | 0.0682                                   | 67                          | 4        | 70-130                  | 35                        | X    |
| Toluene                       | ND                                | 0.1025                | 0.0592                         | 58                            | 0.1025                | 0.0499                                   | 49                          | 17       | 70-130                  | 35                        | X    |
| Ethylbenzene                  | ND                                | 0.1025                | 0.0615                         | 60                            | 0.1025                | 0.0417                                   | 41                          | 38       | 71-129                  | 35                        | XF   |
| m,p-Xylenes                   | ND                                | 0.2050                | 0.1225                         | 60                            | 0.2050                | 0.0824                                   | 40                          | 39       | 70-135                  | 35                        | XF   |
| o-Xylene                      | ND                                | 0.1025                | 0.0583                         | 57                            | 0.1025                | 0.0372                                   | 36                          | 44       | 71-133                  | 35                        | XF   |

Lab Batch ID: 765323

QC- Sample ID: 337175-012 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/14/2009

Date Prepared: 07/11/2009

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|-------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| Benzene                       | ND                                | 0.1058                | 0.0838                         | 79                            | 0.1058                | 0.0820                                   | 78                          | 2        | 70-130                  | 35                        |      |
| Toluene                       | ND                                | 0.1058                | 0.0765                         | 72                            | 0.1058                | 0.0731                                   | 69                          | 5        | 70-130                  | 35                        | X    |
| Ethylbenzene                  | ND                                | 0.1058                | 0.0796                         | 75                            | 0.1058                | 0.0731                                   | 69                          | 9        | 71-129                  | 35                        | X    |
| m,p-Xylenes                   | ND                                | 0.2116                | 0.1580                         | 75                            | 0.2116                | 0.1470                                   | 69                          | 7        | 70-135                  | 35                        | X    |
| o-Xylene                      | ND                                | 0.1058                | 0.0780                         | 74                            | 0.1058                | 0.0709                                   | 67                          | 10       | 71-133                  | 35                        | X    |

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

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

ND = Not Detected, I = 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 - MS / MSD Recoveries



Project Name: 14-Inch Vac to Jal- Legacy

Work Order #: 337175

Project ID: 2009-092

Lab Batch ID: 764775

QC- Sample ID: 337224-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/07/2009

Date Prepared: 07/07/2009

Analyst: BHW

Reporting Units: mg/kg

| MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
|--|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| TPH By SW8015 Mod<br>Analytes                        | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
| C6-C12 Gasoline Range Hydrocarbons                   | 729                               | 1130                  | 1840                           | 98                            | 1130                  | 1870                                     | 101                         | 2        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons                    | 3940                              | 1130                  | 5230                           | 114                           | 1130                  | 5440                                     | 133                         | 4        | 70-135                  | 35                        |      |

Lab Batch ID: 764777

QC- Sample ID: 337175-007 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/08/2009

Date Prepared: 07/07/2009

Analyst: BHW

Reporting Units: mg/kg

| MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
|--|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| TPH By SW8015 Mod<br>Analytes                        | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
| C6-C12 Gasoline Range Hydrocarbons                   | 25.8                              | 1050                  | 916                            | 85                            | 1050                  | 915                                      | 85                          | 0        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons                    | 392                               | 1050                  | 1430                           | 99                            | 1050                  | 1390                                     | 95                          | 3        | 70-135                  | 35                        |      |

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

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

ND = Not Detected, I = 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: 14-Inch Vac to Jal- Legacy

Work Order #: 337175

Lab Batch #: 767305

Date Analyzed: 07/31/2009

QC- Sample ID: 339247-001 D

Reporting Units: mg/kg

Project ID: 2009-092

Analyst: LATCOR

Batch #: 1

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Anions by EPA 300                  | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Chloride                           | 157                      | 166                         | 6   | 20                  |      |

Lab Batch #: 767307

Date Analyzed: 07/31/2009

QC- Sample ID: 337175-017 D

Reporting Units: mg/kg

Date Prepared: 07/31/2009

Analyst: LATCOR

Batch #: 1

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Anions by EPA 300                  | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Chloride                           | 54.4                     | 50.6                        | 3   | 20                  |      |

Lab Batch #: 764625

Date Analyzed: 07/06/2009

QC- Sample ID: 337166-001 D

Reporting Units: %

Date Prepared: 07/06/2009

Analyst: LATCOR

Batch #: 1

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 3.72                     | 4.09                        | 9   | 20                  |      |

Lab Batch #: 764626

Date Analyzed: 07/06/2009

QC- Sample ID: 337175-008 D

Reporting Units: %

Date Prepared: 07/06/2009

Analyst: LATCOR

Batch #: 1

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 10.5                     | 11.0                        | 5   | 20                  |      |

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

# Environmental Lab of Texas

Page 1 of 3

## 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: Camille Bryant

Project Name: 14-Inch Vac to Jal - Legacy

Company Name: Basin Environmental Service Technologies, LLC

Project #: 2009-092

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA - J. Henry

Telephone No: (575) 605-7210

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Camille Bryant

e-mail: cibryant@basin-consulting.com

(Lab use only)

ORDER #: 337115

| LAB # (lab use only) | FIELD CODE | Beginning Depth | Ending Depth | Date Sampled | Time Sampled | Field Filtered | Total # of Containers | Preservation & # of Containers |                  |     |                                |      |                                 |      |                               |                  |              | Other (Specify) | Analyze For:       |                 |         |         |         |         |         |         |         |         | RUSH TAT (Pre-Analysis) 24 hr. 72 hr. | Standard TAT 4 DAY |         |         |         |         |         |         |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
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|                      |            |                 |              |              |              |                |                       | Is                             | HNO <sub>3</sub> | HCl | H <sub>2</sub> SO <sub>4</sub> | NaOH | Na <sub>2</sub> SO <sub>4</sub> | None | SW - Drinking Water & Seepage | GW - Groundwater | S - Sediment |                 | NP - Non-hazardous | HAZ - Hazardous | TX 1005 | TX 1006 | TX 1007 | TX 1008 | TX 1009 | TX 1010 | TX 1011 | TX 1012 |                                       |                    | TX 1013 | TX 1014 | TX 1015 | TX 1016 | TX 1017 | TX 1018 | TX 1019 | TX 1020 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| 01                   | MW-1 @ 5'  |                 |              | 7/1/09       | 0930         | 1              | X                     |                                |                  |     |                                |      |                                 |      |                               | SOIL             | X            |                 |                    |                 |         |         |         |         |         |         |         |         |                                       |                    |         |         |         |         |         |         |         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | </ |

Special Instructions:

|  |                        |                      |                    |       |       |
|--|------------------------|----------------------|--------------------|-------|-------|
| Requisitioned by:<br><u>Camille Bryant</u> | Date:<br><u>7/6/09</u> | Time:<br><u>1335</u> | Received by:       | Date: | Time: |
| Requisitioned by:                          | Date:                  | Time:                | Received by:       | Date: | Time: |
| Requisitioned by:                          | Date:                  | Time:                | Received by: ELOI: | Date: | Time: |

Laboratory Comments:  
 Sample Containers Intact? ☒ N  
 VOCs Free of Headspace? ☒ N  
 Labels on container(s) ☒ N  
 Custody seals on container(s) ☒ N  
 Custody seals on cooler(s) ☒ N  
 Sample Hand Delivered ☒ N  
 by Sampler/Client Rep? ☒ N  
 by Courier? ☒ N  
 UPS ☒ N  
 FedEx ☒ N  
 Lone Star ☒ N  
 Temperature Upon Receipt: 41.0 °C

# Environmental Lab of Texas

Page 2 of 3

## 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: Camille Bryant

Project Name: 14-Inch Vac to Jal - Legacy

Company Name: Basin Environmental Service Technologies, LLC

Project #: 2009-092

Company Address: P. O. Box 301

Project Loc: Les County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA - J. Henry

Telephone No: (505) 605-7210

Fax No: (505) 305-1429

Report Format: ☒ Standard ☐ IRRP ☐ NPDES

Sampler Signature: Camille Bryant

e-mail: cibryant@basin-consulting.com

| LAB (use only) |       | FIELD CODE |  | Beginning Depth | Ending Depth | Date Sampled | Time Sampled | Field Notes | Total # of Containers | Preservation & # of Containers | Matrix | Analyze For: |         |         |         |         |         |         |         |         |         | RUSH TAT (Pre-schedule) 24, 48, 72 hrs |         |         |         |         |         |                    |   |
|----------------|-------|------------|--|-----------------|--------------|--------------|--------------|-------------|-----------------------|--------------------------------|--------|--------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|---------|---------|---------|---------|---------|--------------------|---|
| ORDER #        | LAB # |            |  |                 |              |              |              |             |                       |                                |        | TOTAL        | TX 1006 | TX 1007 | TX 1008 | TX 1009 | TX 1010 | TX 1011 | TX 1012 | TX 1013 | TX 1014 | TX 1015                                | TX 1016 | TX 1017 | TX 1018 | TX 1019 | TX 1020 | Standard TAT 4 DAY |   |
| 33715          |       | SB-2 @ 35' |  |                 |              | 7/1/09       | 1435         | 1           | X                     |                                | SOIL   | X            |         |         |         |         |         |         |         |         |         |  |         |         |         |         |         |                    | X |
|                |       | SB-2 @ 45' |  |                 |              | 7/1/09       | 1510         | 1           | X                     |                                | SOIL   | X            |         |         |         |         |         |         |         |         |         |  |         |         |         |         |         |                    | X |
|                |       | SB-2 @ 50' |  |                 |              | 7/1/09       | 1540         | 1           | X                     |                                | SOIL   | X            |         |         |         |         |         |         |         |         |         |  |         |         |         |         |         |                    | X |
|                |       | SB-2 @ 55' |  |                 |              | 7/1/09       | 1610         | 1           | X                     |                                | SOIL   | X            |         |         |         |         |         |         |         |         |         |  |         |         |         |         |         |                    | X |
|                |       | SB-3 @ 5'  |  |                 |              | 7/2/09       | 0950         | 1           | X                     |                                | SOIL   | X            |         |         |         |         |         |         |         |         |         |  |         |         |         |         |         |                    | X |
|                |       | SB-3 @ 15' |  |                 |              | 7/2/09       | 1015         | 1           | X                     |                                | SOIL   | X            |         |         |         |         |         |         |         |         |         |  |         |         |         |         |         |                    | X |
|                |       | SB-3 @ 25' |  |                 |              | 7/2/09       | 1035         | 1           | X                     |                                | SOIL   | X            |         |         |         |         |         |         |         |         |         |  |         |         |         |         |         |                    | X |
|                |       | SB-3 @ 35' |  |                 |              | 7/2/09       | 1105         | 1           | X                     |                                | SOIL   | X            |         |         |         |         |         |         |         |         |         |  |         |         |         |         |         |                    | X |
|                |       | SB-3 @ 45' |  |                 |              | 7/2/09       | 1130         | 1           | X                     |                                | SOIL   | X            |         |         |         |         |         |         |         |         |         |  |         |         |         |         |         |                    | X |
|                |       | SB-3 @ 50' |  |                 |              | 7/2/09       | 1155         | 1           | X                     |                                | SOIL   | X            |         |         |         |         |         |         |         |         |         |  |         |         |         |         |         |                    | X |

Special Instructions:

Reinforced by: Camille Bryant Date: 7/16/09 Time: 12:35 Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Reinforced by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Reinforced by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Laboratory Comments:

Sample Containers Intact? N

VOCs Free of Headspace? N

Labels on container(s) N

Custody seals on container(s) N

Custody seals on cooler(s) N

Sample Hand Delivered N

by Carrier: UPS DHL FedEx Long Star

Temperature Upon Receipt: 4.1 °C

### 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:** Camille Bryant

**Project Name: 14-Inch Vac to Jal - Legacy**

Company Name **Basin Environmental Service Technologies, LLC**

Project #: 2009-092

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA - J. Henry

Telephone No: (575) 605-7210

Fax No: (505) 398-1428

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Amber K. Smith

e-mail: [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]

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

Client: Basin Env. / Plains  
Date/ Time: 7-6-09 12:35  
Lab ID #: 337175  
Initials: AL

**Sample Receipt Checklist**

|     |  |            |    | Client Initials                 |           |
|-----|--|------------|----|---------------------------------|-----------|
| #1  | Temperature of container/ cooler?                      | <u>Yes</u> | No | <u>4.1</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 337279

for

## PLAINS ALL AMERICAN EH&S

**Project Manager: Jason Henry**

**14-Inch Vac to Jal - Legacy**

**2009-092**

**04-AUG-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-Miramar (EPA Lab code: FL01246): Florida (E86349)

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)

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04-AUG-09

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

Reference: XENCO Report No: **337279**  
**14-Inch Vac to Jal - Legacy**  
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 337279. 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. 337279 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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**Sample Cross Reference 337279**



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

14-Inch Vac to Jal - Legacy

| <b>Sample Id</b> | <b>Matrix</b> | <b>Date Collected</b> | <b>Sample Depth</b> | <b>Lab Sample Id</b> |
|------------------|---------------|-----------------------|---------------------|----------------------|
| SB-3 @ 60'       | S             | Jul-02-09 12:35       |                     | 337279-001           |



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: 14-Inch Vac to Jal - Legacy*

*Project ID: 2009-092*

*Work Order Number: 337279*

*Report Date: 04-AUG-09*

*Date Received: 07/07/2009*

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**Sample receipt non conformances and Comments:**

*Per client's request, Chloride by E300 is to be analyzed although sample 337279-001 (soil) expired 07/30/09. Lab will proceed with 07/31/09 request.*

---

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

None

**Analytical Non Conformances and Comments:**

Batch: LBA-764742 Percent Moisture

None

Batch: LBA-764867 TPH by SW8015 Mod

None

Batch: LBA-765081 BTEX-MTBE EPA 8021B

SW8021BM

*Batch 765081, 4-Bromofluorobenzene recovered above QC limits Data not confirmed by re-analysis. Samples affected are: 533433-1-BKS,337279-001. Matrix interference is suspected.*

Batch: LBA-767458 Inorganic Anions by EPA 300

E300



# Certificate of Analysis Summary 337279

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14-Inch Vac to Jal - Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Tue Jul-07-09 10:15 am

Report Date: 04-AUG-09

Project Manager: Brent Barron, II

|                                    |                   |                 |  |  |  |  |  |
|------------------------------------|-------------------|-----------------|--|--|--|--|--|
| <b>Analysis Requested</b>          | <b>Lab Id:</b>    | 337279-001      |  |  |  |  |  |
|                                    | <b>Field Id:</b>  | SB-3 @ 60'      |  |  |  |  |  |
|                                    | <b>Depth:</b>     |                 |  |  |  |  |  |
|                                    | <b>Matrix:</b>    | SOIL            |  |  |  |  |  |
|                                    | <b>Sampled:</b>   | Jul-02-09 12:35 |  |  |  |  |  |
| <b>Anions by EPA 300</b>           | <b>Extracted:</b> |                 |  |  |  |  |  |
|                                    | <b>Analyzed:</b>  | Aug-03-09 19:34 |  |  |  |  |  |
|                                    | <b>Units/RL:</b>  | mg/kg RL        |  |  |  |  |  |
| Chloride                           |                   | 46.1 5.13       |  |  |  |  |  |
| <b>BTEX by EPA 8021B</b>           | <b>Extracted:</b> | Jul-09-09 17:00 |  |  |  |  |  |
|                                    | <b>Analyzed:</b>  | Jul-10-09 12:56 |  |  |  |  |  |
|                                    | <b>Units/RL:</b>  | mg/kg RL        |  |  |  |  |  |
| Benzene                            |                   | ND 0.0010       |  |  |  |  |  |
| Toluene                            |                   | ND 0.0021       |  |  |  |  |  |
| Ethylbenzene                       |                   | 0.0038 0.0010   |  |  |  |  |  |
| m,p-Xylenes                        |                   | 0.0087 0.0021   |  |  |  |  |  |
| o-Xylene                           |                   | 0.0041 0.0010   |  |  |  |  |  |
| Total Xylenes                      |                   | 0.0128 0.0010   |  |  |  |  |  |
| Total BTEX                         |                   | 0.0166 0.0010   |  |  |  |  |  |
| <b>Percent Moisture</b>            | <b>Extracted:</b> |                 |  |  |  |  |  |
|                                    | <b>Analyzed:</b>  | Jul-07-09 16:00 |  |  |  |  |  |
|                                    | <b>Units/RL:</b>  | % RL            |  |  |  |  |  |
| Percent Moisture                   |                   | 2.46 1.00       |  |  |  |  |  |
| <b>TPH By SW8015 Mod</b>           | <b>Extracted:</b> | Jul-08-09 13:39 |  |  |  |  |  |
|                                    | <b>Analyzed:</b>  | Jul-08-09 16:22 |  |  |  |  |  |
|                                    | <b>Units/RL:</b>  | mg/kg RL        |  |  |  |  |  |
| C6-C12 Gasoline Range Hydrocarbons |                   | 23.7 15.4       |  |  |  |  |  |
| C12-C28 Diesel Range Hydrocarbons  |                   | 126 15.4        |  |  |  |  |  |
| C28-C35 Oil Range Hydrocarbons     |                   | 18.5 15.4       |  |  |  |  |  |
| Total TPH                          |                   | 168.2 15.4      |  |  |  |  |  |

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

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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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|   | 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: 14-Inch Vac to Jal - Legacy

Work Orders : 337279,

Lab Batch #: 765081

Sample: 533433-1-BKS / BKS

Project ID: 2009-092

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/10/09 09:22

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0304           | 0.0300          | 101             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0366           | 0.0300          | 122             | 80-120            | *     |

Lab Batch #: 765081

Sample: 533433-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/10/09 09:43

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0305           | 0.0300          | 102             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0361           | 0.0300          | 120             | 80-120            |       |

Lab Batch #: 765081

Sample: 533433-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/10/09 10:26

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0264           | 0.0300          | 88              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0294           | 0.0300          | 98              | 80-120            |       |

Lab Batch #: 765081

Sample: 337279-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/10/09 12:56

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0254           | 0.0300          | 85              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0385           | 0.0300          | 128             | 80-120            | *     |

Lab Batch #: 764867

Sample: 533304-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/08/09 15:03

## SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 121              | 100             | 121             | 70-135            |       |
| o-Terphenyl       | 53.0             | 50.0            | 106             | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 337279,

Project ID: 2009-092

Lab Batch #: 764867

Sample: 533304-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/08/09 15:30

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 120                 | 100                | 120                   | 70-135               |       |
| o-Terphenyl                   | 51.6                | 50.0               | 103                   | 70-135               |       |

Lab Batch #: 764867

Sample: 533304-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/08/09 15:56

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 112                 | 100                | 112                   | 70-135               |       |
| o-Terphenyl                   | 55.5                | 50.0               | 111                   | 70-135               |       |

Lab Batch #: 764867

Sample: 337279-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 16:22

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 108                 | 99.9               | 108                   | 70-135               |       |
| o-Terphenyl                   | 55.1                | 50.0               | 110                   | 70-135               |       |

Lab Batch #: 764867

Sample: 337279-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 19:25

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 126                 | 100                | 126                   | 70-135               |       |
| o-Terphenyl                   | 54.7                | 50.0               | 109                   | 70-135               |       |

Lab Batch #: 764867

Sample: 337279-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/08/09 19:51

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 129                 | 99.9               | 129                   | 70-135               |       |
| o-Terphenyl                   | 54.2                | 50.0               | 108                   | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Blank Spike Recovery



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 337279

Project ID:

2009-092

Lab Batch #: 767458

Sample: 767458-1-BKS

Matrix: Solid

Date Analyzed: 08/03/2009

Date Prepared: 08/03/2009

Analyst: LATCOR

Reporting Units: mg/kg

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

| Anions by EPA 300<br>Analytes | Blank<br>Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|-------------------------------|------------------------|-----------------------|---------------------------------|-----------------------------|-------------------------|-------|
| Chloride                      | ND                     | 10.0                  | 9.93                            | 99                          | 80-120                  |       |

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

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

- Below Reporting Limit



## BS / BSD Recoveries



**Project Name: 14-Inch Vac to Jal - Legacy**

**Work Order #: 337279**

**Analyst: BRB**

**Date Prepared: 07/09/2009**

**Project ID: 2009-092**

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

**Lab Batch ID: 765081**

**Sample: 533433-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| <b>BTEX by EPA 8021B</b> | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|--------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>          |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| Benzene                  | ND                                     | 0.1000                         | 0.0787                                    | 79                                    | 0.1                            | 0.0802  | 80                                      | 2                | 70-130                           | 35                                 |             |
| Toluene                  | ND                                     | 0.1000                         | 0.0751                                    | 75                                    | 0.1                            | 0.0766  | 77                                      | 2                | 70-130                           | 35                                 |             |
| Ethylbenzene             | ND                                     | 0.1000                         | 0.0845                                    | 85                                    | 0.1                            | 0.0859  | 86                                      | 2                | 71-129                           | 35                                 |             |
| m,p-Xylenes              | ND                                     | 0.2000                         | 0.1724                                    | 86                                    | 0.2                            | 0.1751  | 88                                      | 2                | 70-135                           | 35                                 |             |
| o-Xylene                 | ND                                     | 0.1000                         | 0.0813                                    | 81                                    | 0.1                            | 0.0827  | 83                                      | 2                | 71-133                           | 35                                 |             |

**Analyst: BHW**

**Date Prepared: 07/08/2009**

**Date Analyzed: 07/08/2009**

**Lab Batch ID: 764867**

**Sample: 533304-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| <b>TPH By SW8015 Mod</b>           | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|------------------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>                    |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| C6-C12 Gasoline Range Hydrocarbons | ND                                     | 1000                           | 816                                       | 82                                    | 1000                           | 818   | 82                                      | 0                | 70-135                           | 35                                 |             |
| C12-C28 Diesel Range Hydrocarbons  | ND                                     | 1000                           | 848                                       | 85                                    | 1000                           | 843   | 84                                      | 1                | 70-135                           | 35                                 |             |

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

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

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

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS Recoveries



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 337279

Lab Batch #: 767458

Date Analyzed: 08/03/2009

QC- Sample ID: 337279-001 S

Reporting Units: mg/kg

Project ID: 2009-092

Analyst: LATCOR

Date Prepared: 08/03/2009

Batch #: 1

Matrix: Soil

| 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 |
| Chloride                    |  | 46.1                                 | 103             | 150                      | 101    | 80-120            |

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

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

All Results are based on MDL and Validated for QC Purposes

☐ Below Reporting Limit



## Form 3 - MS / MSD Recoveries

Project Name: 14-Inch Vac to Jal - Legacy



Work Order #: 337279

Project ID: 2009-092

Lab Batch ID: 764867

QC- Sample ID: 337279-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/08/2009

Date Prepared: 07/08/2009

Analyst: BHW

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes      | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| C6-C12 Gasoline Range Hydrocarbons | 23.7                              | 1030                  | 872                            | 82                            | 1020                  | 891                                      | 85                          | 2        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | 126                               | 1030                  | 1040                           | 89                            | 1020                  | 1060                                     | 92                          | 2        | 70-135                  | 35                        |      |

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

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

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



## Sample Duplicate Recovery



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 337279

Lab Batch #: 767458

Date Analyzed: 08/03/2009

QC- Sample ID: 337279-001 D

Reporting Units: mg/kg

Project ID: 2009-092

Date Prepared: 08/03/2009

Analyst: LATCOR

Batch #: 1

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Anions by EPA 300                  | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Chloride                           | 46.1                     | 45.4                        | 2   | 20                  |      |

Lab Batch #: 764742

Date Analyzed: 07/07/2009

QC- Sample ID: 337200-001 D

Reporting Units: %

Date Prepared: 07/07/2009

Analyst: BEV

Batch #: 1

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 4.27                     | 3.58                        | 18  | 20                  |      |

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

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

BRL - Below Reporting Limit



# Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin Plains  
 Date/ Time: 07/07/09 10:15  
 Lab ID #: 337279  
 Initials: nmh

## Sample Receipt Checklist

|     |  |   |                             | Client Initials          |
|-----|--|---|-----------------------------|--------------------------|
| #1  | Temperature of container/cooler?                       | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <u>N.L.</u> °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 | <u>Not Present</u>       |
| #4  | Custody Seals intact on sample bottles/container?      | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <u>Not Present</u>       |
| #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 | <u>Not Applicable</u>    |
| #20 | VOC samples have zero headspace?                       | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> 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 346217**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14-Inch Vac to Jal-Legacy**

**2009-092**

**30-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)



30-SEP-09

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

Reference: XENCO Report No: **346217**  
**14-Inch Vac to Jal-Legacy**  
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 346217. 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. 346217 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 346217



PLAINS ALL AMERICAN EH&S, Midland, TX

14-Inch Vac to Jal-Legacy

| Sample Id          | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|--------------------|--------|-----------------|--------------|---------------|
| Treatment Cell # 1 | S      | Sep-24-09 16:00 |              | 346217-001    |





## CASE NARRATIVE

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

**Project Name:** 14-Inch Vac to Jal-Legacy

**Project ID:** 2009-092

**Work Order Number:** 346217

**Report Date:** 30-SEP-09

**Date Received:** 09/28/2009

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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-774613 Percent Moisture

None

Batch: LBA-774863 TX1005

None

Batch: LBA-774935 BTEX-MTBE EPA 8021B

SW8021BM

Batch 774935, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 346217-001.



# Certificate of Analysis Summary 346217

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14-Inch Vac to Jal-Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Mon Sep-28-09 09:35 am

Report Date: 30-SEP-09

Project Manager: Brent Barron, II

|                                    |   |  |  |  |  |  |
|------------------------------------|---|--|--|--|--|--|
| <b>Analysis Requested</b>          | <b>Lab Id:</b> 346217-001<br><b>Field Id:</b> Treatment Cell # 1<br><b>Depth:</b><br><b>Matrix:</b> SOIL<br><b>Sampled:</b> Sep-24-09 16:00 |  |  |  |  |  |
| <b>BTEX by EPA 8021B</b>           | <b>Extracted:</b> Sep-30-09 10:00<br><b>Analyzed:</b> Sep-30-09 15:50<br><b>Units/RL:</b> mg/kg RL  |  |  |  |  |  |
| Benzene                            | 1.539 0.2060  |  |  |  |  |  |
| Toluene                            | 31.40 0.4120  |  |  |  |  |  |
| Ethylbenzene                       | 30.15 0.2060  |  |  |  |  |  |
| m,p-Xylenes                        | 51.23 0.4120  |  |  |  |  |  |
| o-Xylene                           | 21.99 0.2060  |  |  |  |  |  |
| Total Xylenes                      | 73.22 0.2060  |  |  |  |  |  |
| Total BTEX                         | 136.31 0.2060   |  |  |  |  |  |
| <b>Percent Moisture</b>            | <b>Extracted:</b><br><b>Analyzed:</b> Sep-29-09 09:07<br><b>Units/RL:</b> % RL  |  |  |  |  |  |
| Percent Moisture                   | 2.92 1.00   |  |  |  |  |  |
| <b>TPH By SW8015 Mod</b>           | <b>Extracted:</b> Sep-29-09 22:44<br><b>Analyzed:</b> Sep-30-09 05:23<br><b>Units/RL:</b> mg/kg RL  |  |  |  |  |  |
| C6-C12 Gasoline Range Hydrocarbons | 2560 155  |  |  |  |  |  |
| C12-C28 Diesel Range Hydrocarbons  | 8530 155  |  |  |  |  |  |
| C28-C35 Oil Range Hydrocarbons     | 220 155   |  |  |  |  |  |
| Total TPH                          | 11310 155   |  |  |  |  |  |

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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|---|----------------|----------------|
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| 9701 Harry Hines Blvd , Dallas, TX 75220    | (214) 902 0300 | (214) 351-9139 |
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| 5757 NW 158th St, Miami Lakes, FL 33014     | (305) 823-8500 | (305) 823-8555 |
| 12600 West I-20 East, Odessa, TX 79765      | (432) 563-1800 | (432) 563-1713 |
| 842 Cantwell Lane, Corpus Christi, TX 78408 | (361) 884-0371 | (361) 884-9116 |

# Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal-Legacy

Work Orders : 346217,

Lab Batch #: 774935

Sample: 539231-1-BKS / BKS

Project ID: 2009-092

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/30/09 13:14

## 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 | 0.0303           | 0.0300          | 101             | 80-120            |       |

Lab Batch #: 774935

Sample: 539231-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/30/09 13:56

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0267           | 0.0300          | 89              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0302           | 0.0300          | 101             | 80-120            |       |

Lab Batch #: 774935

Sample: 346217-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 15:50

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0194           | 0.0300          | 65              | 80-120            | **    |
| 4-Bromofluorobenzene | 0.0317           | 0.0300          | 106             | 80-120            |       |

Lab Batch #: 774863

Sample: 539177-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/29/09 23:36

## SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 85.0             | 100             | 85              | 70-135            |       |
| o-Terphenyl       | 36.1             | 50.0            | 72              | 70-135            |       |

Lab Batch #: 774863

Sample: 539177-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/30/09 00:01

## SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 87.7             | 100             | 88              | 70-135            |       |
| o-Terphenyl       | 36.7             | 50.0            | 73              | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal-Legacy

Work Orders : 346217,

Project ID: 2009-092

Lab Batch #: 774863

Sample: 539177-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/30/09 00:25

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 80.5                | 100                | 81                    | 70-135               |       |
| o-Terphenyl                   | 39.7                | 50.0               | 79                    | 70-135               |       |

Lab Batch #: 774863

Sample: 346217-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 05:23

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 119                 | 100                | 119                   | 70-135               |       |
| o-Terphenyl                   | 41.4                | 50.0               | 83                    | 70-135               |       |

Lab Batch #: 774863

Sample: 345957-002 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/09 05:49

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 96.2                | 100                | 96                    | 70-135               |       |
| o-Terphenyl                   | 46.8                | 50.0               | 94                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Blank Spike Recovery



Project Name: 14-Inch Vac to Jal-Legacy

Work Order #: 346217

Project ID:

2009-092

Lab Batch #: 774935

Sample: 539231-1-BKS

Matrix: Solid

Date Analyzed: 09/30/2009

Date Prepared: 09/30/2009

Analyst: ASA

Reporting Units: mg/kg

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Blank<br>Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|-------------------------------|------------------------|-----------------------|---------------------------------|-----------------------------|-------------------------|-------|
| Benzene                       | ND                     | 0.1000                | 0.0926                          | 93                          | 70-130                  |       |
| Toluene                       | ND                     | 0.1000                | 0.0917                          | 92                          | 70-130                  |       |
| Ethylbenzene                  | ND                     | 0.1000                | 0.0941                          | 94                          | 71-129                  |       |
| m,p-Xylenes                   | ND                     | 0.2000                | 0.2057                          | 103                         | 70-135                  |       |
| o-Xylene                      | ND                     | 0.1000                | 0.0990                          | 99                          | 71-133                  |       |

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

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

- Below Reporting Limit



## BS / BSD Recoveries



**Project Name: 14-Inch Vac to Jal-Legacy**

**Work Order #: 346217**

**Analyst: BHW**

**Date Prepared: 09/29/2009**

**Project ID: 2009-092**

**Date Analyzed: 09/29/2009**

**Lab Batch ID: 774863**

**Sample: 539177-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| TPH By SW8015 Mod                  | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes                           |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| C6-C12 Gasoline Range Hydrocarbons | ND                            | 1000                  | 848                             | 85                          | 1000                  | 877                                       | 88                            | 3        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | ND                            | 1000                  | 813                             | 81                          | 1000                  | 846                                       | 85                            | 4        | 70-135                  | 35                        |      |

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

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

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

All results are based on MDL and Validated for QC Purposes



## Sample Duplicate Recovery



Project Name: 14-Inch Vac to Jal-Legacy

Work Order #: 346217

Lab Batch #: 774613

Project ID: 2009-092

Date Analyzed: 09/29/2009

Date Prepared: 09/29/2009

Analyst: BEV

QC- Sample ID: 346186-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 12.2                     | 13.0                        | 7   | 20                  |      |

Lab Batch #: 774863

Date Analyzed: 09/30/2009

Date Prepared: 09/29/2009

Analyst: BHW

QC- Sample ID: 345957-002 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| TPH By SW8015 Mod                  | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| C6-C12 Gasoline Range Hydrocarbons | ND                       | ND                          | NC  | 35                  |      |
| C12-C28 Diesel Range Hydrocarbons  | 36.0                     | 39.3                        | 9   | 35                  |      |
| C28-C35 Oil Range Hydrocarbons     | ND                       | ND                          | NC  | 35                  |      |

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

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

BRL - Below Reporting Limit



## Environmental Lab of Texas

### CHAIN OF CUSTODY, RECORD AND ANALYSIS REQUEST

12600 West 1-20 East  
Odessa, Texas 79765

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

Project Manager: Cun Stanley PAGE 01 OF 02

Project Name: 14-Inch Vac to Jal - Legacy

Company Name Basin Environmental Service Technologies, LLC

Project #: 2008-082

Company Address 2800 Plains Hwy

Project Loc: Lea County, NM

City/State/Zip. Lovington, NM 88260

PO #: PAA - J. Henry

Telephone No: (575) 441-2244 Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPOES

Sampler Signature: *C. Stanley* e-mail: [cstanley@basinenv.com](mailto:cstanley@basinenv.com)

[illegible]

# Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client:

Basin Env. / Plains

Date/ Time:

9.28.09 9:35

Lab ID #:

340217

Initials:

ca

## Sample Receipt Checklist

|     |  |   |    | Client Initials           |
|-----|--|---|----|---------------------------|
| #1  | Temperature of container/ cooler?                      | <input checked="" type="checkbox"/> Yes | No | 3.6 °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 | <del>Not Present</del>    |
| #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 ELDT?                           | <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 | <del>Not Applicable</del> |
| #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 346641**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14" Vac to Jal - Legacy**

**2009-092**

**06-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)



06-OCT-09

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

Reference: XENCO Report No: **346641**  
**14" Vac to Jal - Legacy**  
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 346641. 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. 346641 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 346641



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal - Legacy

| Sample Id         | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|-------------------|--------|-----------------|--------------|---------------|
| West Exc. NSW-1   | S      | Sep-30-09 16:00 |              | 346641-001    |
| West Exc. WSW-1   | S      | Sep-30-09 16:05 |              | 346641-002    |
| West Exc. SSW-1   | S      | Sep-30-09 16:10 |              | 346641-003    |
| West Exc. Floor-1 | S      | Sep-30-09 16:15 |              | 346641-004    |
| West Exc. Floor-2 | S      | Sep-30-09 16:20 |              | 346641-005    |



## CASE NARRATIVE

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

**Project Name:** 14" Vac to Jal - Legacy

**Project ID:** 2009-092

**Work Order Number:** 346641

**Report Date:** 06-OCT-09

**Date Received:** 10/01/2009

---

**Sample receipt non conformances and Comments:**

None

---

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

None

**Analytical Non Conformances and Comments:**

Batch: LBA-775229 Percent Moisture

None

Batch: LBA-775555 BTEX-MTBE EPA 8021B  
SW8021BM

Batch 775555, Benzene, Ethylbenzene, Toluene, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. m,p-Xylenes recovered below QC limits in the Matrix Spike Duplicate.

Samples affected are: 346641-001, -003, -002, -004, -005.

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

Batch: LBA-775682 TPH by SW8015 Mod

None



# Certificate of Analysis Summary 346641

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal - Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Thu Oct-01-09 07:35 am


Report Date: 06-OCT-09

Project Manager: Brent Barron, II

| Analysis Requested                 | Lab Id:    | 346641-001      | 346641-002      | 346641-003      | 346641-004        | 346641-005        |  |
|------------------------------------|------------|-----------------|-----------------|-----------------|-------------------|-------------------|--|
|                                    | Field Id:  | West Exc. NSW-1 | West Exc. WSW-1 | West Exc. SSW-1 | West Exc. Floor-1 | West Exc. Floor-2 |  |
|                                    | Depth:     |                 |                 |                 |                   |                   |  |
|                                    | Matrix:    | SOIL            | SOIL            | SOIL            | SOIL              | SOIL              |  |
|                                    | Sampled:   | Sep-30-09 16:00 | Sep-30-09 16:05 | Sep-30-09 16:10 | Sep-30-09 16:15   | Sep-30-09 16:20   |  |
| BTEX by EPA 8021B                  | Extracted: | Oct-02-09 16:15 | Oct-02-09 16:15 | Oct-02-09 16:15 | Oct-02-09 16:15   | Oct-02-09 16:15   |  |
|                                    | Analyzed:  | Oct-03-09 14:50 | Oct-03-09 15:12 | Oct-03-09 15:32 | Oct-03-09 15:54   | Oct-03-09 16:15   |  |
|                                    | Units/RL:  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL          | mg/kg RL          |  |
|                                    |            |                 |                 |                 |                   |                   |  |
| Benzene                            |            | ND 0.0011       | ND 0.0012       | ND 0.0011       | ND 0.0012         | ND 0.0012         |  |
| Toluene                            |            | ND 0.0022       | ND 0.0024       | ND 0.0023       | ND 0.0023         | ND 0.0024         |  |
| Ethylbenzene                       |            | ND 0.0011       | ND 0.0012       | ND 0.0011       | ND 0.0012         | ND 0.0012         |  |
| m,p-Xylenes                        |            | ND 0.0022       | ND 0.0024       | ND 0.0023       | ND 0.0023         | ND 0.0024         |  |
| o-Xylene                           |            | ND 0.0011       | ND 0.0012       | ND 0.0011       | ND 0.0012         | ND 0.0012         |  |
| Total Xylenes                      |            | ND 0.0011       | ND 0.0012       | ND 0.0011       | ND 0.0012         | ND 0.0012         |  |
| Total BTEX                         |            | ND 0.0011       | ND 0.0012       | ND 0.0011       | ND 0.0012         | ND 0.0012         |  |
| Percent Moisture                   | Extracted: |                 |                 |                 |                   |                   |  |
|                                    | Analyzed:  | Oct-02-09 09:28 | Oct-02-09 09:28 | Oct-02-09 09:28 | Oct-02-09 09:28   | Oct-02-09 09:28   |  |
|                                    | Units/RL:  | % RL            | % RL            | % RL            | % RL              | % RL              |  |
|                                    |            |                 |                 |                 |                   |                   |  |
| Percent Moisture                   |            | 9.99 1.00       | 18.1 1.00       | 12.6 1.00       | 14.6 1.00         | 16.6 1.00         |  |
| TPH By SW8015 Mod                  | Extracted: | Oct-04-09 14:52 | Oct-04-09 14:52 | Oct-04-09 14:52 | Oct-04-09 14:52   | Oct-04-09 14:52   |  |
|                                    | Analyzed:  | Oct-05-09 14:02 | Oct-05-09 14:28 | Oct-05-09 14:53 | Oct-05-09 15:18   | Oct-05-09 15:43   |  |
|                                    | Units/RL:  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL          | mg/kg RL          |  |
|                                    |            |                 |                 |                 |                   |                   |  |
| C6-C12 Gasoline Range Hydrocarbons |            | ND 16.7         | ND 18.3         | ND 17.2         | ND 17.6           | ND 18.0           |  |
| C12-C28 Diesel Range Hydrocarbons  |            | ND 16.7         | ND 18.3         | 20.7 17.2       | ND 17.6           | ND 18.0           |  |
| C28-C35 Oil Range Hydrocarbons     |            | ND 16.7         | ND 18.3         | ND 17.2         | ND 17.6           | ND 18.0           |  |
| Total TPH                          |            | ND 16.7         | ND 18.3         | 20.7 17.2       | ND 17.6           | ND 18.0           |  |

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

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal - Legacy

Work Orders : 346641,

Project ID: 2009-092

Lab Batch #: 775555

Sample: 539581-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/03/09 08:13

### SURROGATE RECOVERY STUDY

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

Lab Batch #: 775555

Sample: 539581-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/03/09 08:34

### SURROGATE RECOVERY STUDY

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

Lab Batch #: 775555

Sample: 539581-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/03/09 09:16

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0268           | 0.0300          | 89              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0295           | 0.0300          | 98              | 80-120            |       |

Lab Batch #: 775555

Sample: 346641-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/03/09 14:50

### 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 | 0.0312           | 0.0300          | 104             | 80-120            |       |

Lab Batch #: 775555

Sample: 346641-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/03/09 15:12

### 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 | 0.0325           | 0.0300          | 108             | 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: 14" Vac to Jal - Legacy

Work Orders : 346641,

Project ID: 2009-092

Lab Batch #: 775555

Sample: 346641-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/03/09 15:32

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0267           | 0.0300          | 89              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0308           | 0.0300          | 103             | 80-120            |       |

Lab Batch #: 775555

Sample: 346641-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/03/09 15:54

### 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 | 0.0316           | 0.0300          | 105             | 80-120            |       |

Lab Batch #: 775555

Sample: 346641-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/03/09 16:15

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0271           | 0.0300          | 90              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0316           | 0.0300          | 105             | 80-120            |       |

Lab Batch #: 775555

Sample: 346856-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/03/09 18:21

### 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 | 0.0314           | 0.0300          | 105             | 80-120            |       |

Lab Batch #: 775555

Sample: 346856-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/03/09 18:42

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0291           | 0.0300          | 97              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0322           | 0.0300          | 107             | 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: 14" Vac to Jal - Legacy

Work Orders : 346641,

Lab Batch #: 775682

Sample: 539683-1-BKS / BKS

Project ID: 2009-092

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/05/09 11:57

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 91.3             | 100             | 91              | 70-135            |       |
| o-Terphenyl       | 35.4             | 50.0            | 71              | 70-135            |       |

Lab Batch #: 775682

Sample: 539683-1-bsd / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/05/09 12:22

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 87.5             | 100             | 88              | 70-135            |       |
| o-Terphenyl       | 36.2             | 50.0            | 72              | 70-135            |       |

Lab Batch #: 775682

Sample: 539683-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/05/09 12:47

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 75.5             | 100             | 76              | 70-135            |       |
| o-Terphenyl       | 36.7             | 50.0            | 73              | 70-135            |       |

Lab Batch #: 775682

Sample: 346641-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/05/09 14:02

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 72.6             | 100             | 73              | 70-135            |       |
| o-Terphenyl       | 36.1             | 50.0            | 72              | 70-135            |       |

Lab Batch #: 775682

Sample: 346641-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/05/09 14:28

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 73.3             | 100             | 73              | 70-135            |       |
| o-Terphenyl       | 35.6             | 50.0            | 71              | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal - Legacy

Work Orders : 346641,

Project ID: 2009-092

Lab Batch #: 775682

Sample: 346641-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/05/09 14:53

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 76.1                | 100                | 76                    | 70-135               |       |
| o-Terphenyl                   | 35.1                | 50.0               | 70                    | 70-135               |       |

Lab Batch #: 775682

Sample: 346641-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/05/09 15:18

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 74.1                | 100                | 74                    | 70-135               |       |
| o-Terphenyl                   | 36.1                | 50.0               | 72                    | 70-135               |       |

Lab Batch #: 775682

Sample: 346641-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/05/09 15:43

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 75.5                | 100                | 76                    | 70-135               |       |
| o-Terphenyl                   | 36.0                | 50.0               | 72                    | 70-135               |       |

Lab Batch #: 775682

Sample: 346327-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/05/09 21:54

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 94.1                | 100                | 94                    | 70-135               |       |
| o-Terphenyl                   | 36.1                | 50.0               | 72                    | 70-135               |       |

Lab Batch #: 775682

Sample: 346327-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/05/09 22:19

### SURROGATE RECOVERY STUDY

| TPH By SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 90.9                | 100                | 91                    | 70-135               |       |
| o-Terphenyl                   | 36.0                | 50.0               | 72                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## BS / BSD Recoveries



Project Name: 14" Vac to Jal - Legacy

Work Order #: 346641

Analyst: ASA

Date Prepared: 10/02/2009

Project ID: 2009-092

Date Analyzed: 10/03/2009

Lab Batch ID: 775555

Sample: 539581-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### 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          | 0.0966                 | 97                 | 0.1             | 0.0976                           | 98                   | 1     | 70-130            | 35                  |      |
| Toluene           | ND                      | 0.1000          | 0.0932                 | 93                 | 0.1             | 0.0947                           | 95                   | 2     | 70-130            | 35                  |      |
| Ethylbenzene      | ND                      | 0.1000          | 0.0937                 | 94                 | 0.1             | 0.0956                           | 96                   | 2     | 71-129            | 35                  |      |
| m,p-Xylenes       | ND                      | 0.2000          | 0.2039                 | 102                | 0.2             | 0.2082                           | 104                  | 2     | 70-135            | 35                  |      |
| o-Xylene          | ND                      | 0.1000          | 0.0993                 | 99                 | 0.1             | 0.1009                           | 101                  | 2     | 71-133            | 35                  |      |

Analyst: BHW

Date Prepared: 10/04/2009

Date Analyzed: 10/05/2009

Lab Batch ID: 775682

Sample: 539683-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| TPH By SW8015 Mod                  |                         |                 |                        |                    |                 |                                  |                      |       |                   |                     |      |
|------------------------------------|-------------------------|-----------------|------------------------|--------------------|-----------------|----------------------------------|----------------------|-------|-------------------|---------------------|------|
|                                    | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
| Analytes                           |                         |                 |                        |                    |                 |                                  |                      |       |                   |                     |      |
| C6-C12 Gasoline Range Hydrocarbons | ND                      | 1000            | 852                    | 85                 | 1000            | 867                              | 87                   | 2     | 70-135            | 35                  |      |
| C12-C28 Diesel Range Hydrocarbons  | ND                      | 1000            | 823                    | 82                 | 1000            | 828                              | 83                   | 1     | 70-135            | 35                  |      |

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS / MSD Recoveries



Project Name: 14" Vac to Jal - Legacy

Work Order #: 346641

Project ID: 2009-092

Lab Batch ID: 775555

QC- Sample ID: 346856-006 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/03/2009

Date Prepared: 10/02/2009

Analyst: ASA

Reporting Units: mg/kg

| MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
|--|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| BTEX by EPA 8021B<br>Analytes                        | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
| Benzene  | ND                                | 0.1095                | 0.0675                         | 62                            | 0.1088                | 0.0643                                   | 59                          | 5        | 70-130                  | 35                        | X    |
| Toluene  | ND                                | 0.1095                | 0.0702                         | 64                            | 0.1088                | 0.0651                                   | 60                          | 8        | 70-130                  | 35                        | X    |
| Ethylbenzene   | ND                                | 0.1095                | 0.0685                         | 63                            | 0.1088                | 0.0646                                   | 59                          | 6        | 71-129                  | 35                        | X    |
| m,p-Xylenes  | ND                                | 0.2189                | 0.1647                         | 75                            | 0.2176                | 0.1504                                   | 69                          | 9        | 70-135                  | 35                        | X    |
| o-Xylene   | ND                                | 0.1095                | 0.0751                         | 69                            | 0.1088                | 0.0696                                   | 64                          | 8        | 71-133                  | 35                        | X    |

Lab Batch ID: 775682

QC- Sample ID: 346327-006 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/05/2009

Date Prepared: 10/04/2009

Analyst: BHW

Reporting Units: mg/kg

| MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
|--|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| TPH By SW8015 Mod<br>Analytes                        | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
| C6-C12 Gasoline Range Hydrocarbons                   | ND                                | 1020                  | 914                            | 90                            | 1020                  | 894                                      | 88                          | 2        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons                    | ND                                | 1020                  | 877                            | 86                            | 1020                  | 855                                      | 84                          | 3        | 70-135                  | 35                        |      |

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

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

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



## Sample Duplicate Recovery



**Project Name: 14" Vac to Jal - Legacy**

**Work Order #: 346641**

**Lab Batch #: 775229**

**Project ID: 2009-092**

**Date Analyzed: 10/02/2009**

**Date Prepared: 10/02/2009**

**Analyst: BEV**

**QC- Sample ID: 346641-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 9.99                     | 9.96                        | 0   | 20                  |      |

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

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

BRL - Below Reporting Limit

# 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: 2800 Plains Hwy  
City/State/Zip: Lovington, NM 88260  
Telephone No: (575) 441-2244 Fax No: (575) 395-1429  
Sampler Signature: [Signature] e-mail: csstanley@basinenrv.com

Project Name: 14" Vac to Jail - Legacy  
Project #: 2009-092  
Project Loc: Lea County, NM  
PO #: PAA - J. Henry  
Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only)

ORDER #: 346041

| LAB # (lab use only) | FIELD CODE        | Beginning Depth | Ending Depth | Date Sampled | Time Sampled | Field Filtered | Total # of Containers | Preservation & # of Containers |                  |     |                               |      |                                |            |                 |                                 |                       | Matrix           |                   |           |          |            |           |           |          |            |           | Analyze For: |
|----------------------|-------------------|-----------------|--------------|--------------|--------------|----------------|-----------------------|--------------------------------|------------------|-----|-------------------------------|------|--------------------------------|------------|-----------------|---------------------------------|-----------------------|------------------|-------------------|-----------|----------|------------|-----------|-----------|----------|------------|-----------|--------------|
|                      |                   |                 |              |              |              |                |                       | Ice                            | HNO <sub>3</sub> | HCl | H <sub>2</sub> O <sub>2</sub> | NaOH | H <sub>2</sub> SO <sub>4</sub> | None (PAA) | Other (Specify) | DMV Driving Under the Influence | DMV Chemical Analysis | DMV Breathalyzer | DMV Blood Alcohol | DMV Urine | DMV Hair | DMV Saliva | DMV Sweat | DMV Urine | DMV Hair | DMV Saliva | DMV Sweat |              |
| 01                   | West Exc. NSW-1   |                 |              | 9/30/2009    | 1500         | 1              | X                     |                                |                  |     |                               |      |                                |            |                 |                                 |                       |                  |                   |           |          |            |           |           |          |            |           | TOTAL        |
| 02                   | West Exc. WSW-1   |                 |              | 9/30/2009    | 1605         | 1              | X                     |                                |                  |     |                               |      |                                |            |                 |                                 |                       |                  |                   |           |          |            |           |           |          |            |           | TOTAL        |
| 03                   | West Exc. SSW-1   |                 |              | 9/30/2009    | 1810         | 1              | X                     |                                |                  |     |                               |      |                                |            |                 |                                 |                       |                  |                   |           |          |            |           |           |          |            |           | TOTAL        |
| 04                   | West Exc. Floor-1 |                 |              | 9/30/2009    | 1815         | 1              | X                     |                                |                  |     |                               |      |                                |            |                 |                                 |                       |                  |                   |           |          |            |           |           |          |            |           | TOTAL        |
| 05                   | West Exc. Floor-2 |                 |              | 9/30/2009    | 1820         | 1              | X                     |                                |                  |     |                               |      |                                |            |                 |                                 |                       |                  |                   |           |          |            |           |           |          |            |           | TOTAL        |

Special Instructions:

|                                  |                       |                   |                    |       |       |
|----------------------------------|-----------------------|-------------------|--------------------|-------|-------|
| Requested by: <u>[Signature]</u> | Date: <u>10/09/09</u> | Time: <u>0735</u> | Received by:       | Date: | Time: |
| Requested by:                    | Date:                 | Time:             | Received by:       | Date: | Time: |
| Requested by:                    | Date:                 | Time:             | Received by: ELOI: | Date: | Time: |

Laboratory Comments:  
Sample Containers labeled? ☒  
VOCs Free of Headpace? ☒  
Labels on containers? ☒  
Custody seals on containers? ☒  
Custody seals on containers? ☒  
Sample Hand Delivered? ☒  
by Sample Client Rep.? ☒  
UPS DHL FedEx Lohm Star  
Temperature Upon Receipt: 11 °C



# Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client Plains Basin Env  
 Date/ Time 10-01-09 00738  
 Lab ID #: 344041  
 Initials: JMF

## Sample Receipt Checklist

|   | Yes                                 | No                       | Client Initials                                    |
|---|-------------------------------------|--------------------------|--|
| #1 Temperature of container/ cooler?                          | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 1.1 °C   |
| #2 Shipping container in good condition?                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| #3 Custody Seals intact on shipping container/ cooler?        | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> Not Present    |
| #4 Custody Seals intact on sample bottles/ container? (label) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Not Present  |
| #5 Chain of Custody present?                                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| #6 Sample instructions complete of Chain of Custody?          | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| #7 Chain of Custody signed when relinquished/ received?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| #8 Chain of Custody agrees with sample label(s)?              | <input checked="" type="checkbox"/> | <input type="checkbox"/> | ID written on Cont / Lid                           |
| #9 Container label(s) legible and intact?                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Not Applicable                                     |
| #10 Sample matrix/ properties agree with Chain of Custody?    | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| #11 Containers supplied by ELOT?                              | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| #12 Samples in proper container/ bottle?                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | See Below  |
| #13 Samples properly preserved?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> | See Below  |
| #14 Sample bottles intact?                                    | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| #15 Preservations documented on Chain of Custody?             | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| #16 Containers documented on Chain of Custody?                | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| #17 Sufficient sample amount for indicated test(s)?           | <input checked="" type="checkbox"/> | <input type="checkbox"/> | See Below  |
| #18 All samples received within sufficient hold time?         | <input checked="" type="checkbox"/> | <input type="checkbox"/> | See Below  |
| #19 Subcontract of sample(s)?                                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> Not Applicable |
| #20 VOC samples have zero headspace?                          | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 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 351779**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14-Inch Vac to Jal Legacy**

**2009-092**

**16-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 (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-NOV-09

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

Reference: XENCO Report No: **351779**  
**14-Inch Vac to Jal Legacy**  
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 351779. 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. 351779 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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## Sample Cross Reference 351779



PLAINS ALL AMERICAN EH&S, Midland, TX

14-Inch Vac to Jal Legacy

| Sample Id       | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|-----------------|--------|-----------------|--------------|---------------|
| GP # 1 @ 6 Ft   | S      | Nov-10-09 13:00 |              | 351779-001    |
| GP # 2 @ Grade  | S      | Nov-10-09 13:05 |              | 351779-002    |
| GP # 3 @ Grade  | S      | Nov-10-09 13:10 |              | 351779-003    |
| GP # 4 @ 5 Ft   | S      | Nov-10-09 13:15 |              | 351779-004    |
| GP # 5 @ 7 Ft   | S      | Nov-10-09 13:20 |              | 351779-005    |
| GP # 6 @ 9 Ft   | S      | Nov-10-09 13:25 |              | 351779-006    |
| GP # 7 @ 9 Ft   | S      | Nov-10-09 13:30 |              | 351779-007    |
| GP # 8 @ 9 Ft   | S      | Nov-10-09 13:35 |              | 351779-008    |
| GP # 9 @ 10 Ft  | S      | Nov-10-09 13:40 |              | 351779-009    |
| GP # 10 @ 7 Ft  | S      | Nov-10-09 13:45 |              | 351779-010    |
| GP # 11 @ 7 Ft  | S      | Nov-10-09 13:50 |              | 351779-011    |
| GP # 12 @ 10 Ft | S      | Nov-10-09 13:55 |              | 351779-012    |
| GP # 13 @ 10 Ft | S      | Nov-10-09 14:00 |              | 351779-013    |
| GP # 14 @ 12 Ft | S      | Nov-10-09 14:05 |              | 351779-014    |
| GP # 15 @ 10 Ft | S      | Nov-10-09 14:10 |              | 351779-015    |
| GP # 16 @ 10 Ft | S      | Nov-10-09 14:15 |              | 351779-016    |



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: 14-Inch Vac to Jal Legacy*

*Project ID: 2009-092*

*Work Order Number: 351779*

*Report Date: 16-NOV-09*

*Date Received: 11/11/2009*

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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-781290 Inorganic Anions by EPA 300

None

Batch: LBA-781303 TPH by SW8015 Mod

None

Batch: LBA-781403 Percent Moisture

None

Batch: LBA-781406 Percent Moisture

None

Batch: LBA-781411 Inorganic Anions In Soil by E300

None



# Certificate of Analysis Summary 351779

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14-Inch Vac to Jal Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed Nov-11-09 08:12 am

Report Date: 16-NOV-09


Project Manager: Brent Barron, II

| <i>Analysis Requested</i>               | <i>Lab Id:</i>    | 351779-001      | 351779-002      | 351779-003      | 351779-004      | 351779-005      | 351779-006      |
|---|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|   | <i>Field Id:</i>  | GP # 1 @ 6 Ft   | GP # 2 @ Grade  | GP # 3 @ Grade  | GP # 4 @ 5 Ft   | GP # 5 @ 7 Ft   | GP # 6 @ 9 Ft   |
|   | <i>Depth:</i>     |                 |                 |                 |                 |                 |                 |
|   | <i>Matrix:</i>    | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            |
|   | <i>Sampled:</i>   | Nov-10-09 13:00 | Nov-10-09 13:05 | Nov-10-09 13:10 | Nov-10-09 13:15 | Nov-10-09 13:20 | Nov-10-09 13:25 |
| <b>Inorganic Anions In Soil by E300</b> | <i>Extracted:</i> |                 |                 |                 |                 |                 |                 |
|   | <i>Analyzed:</i>  | Nov-11-09 13:33 | Nov-11-09 13:33 | Nov-11-09 13:33 | Nov-11-09 13:33 | Nov-11-09 13:33 | Nov-12-09 08:42 |
|   | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |
| Chloride                                |                   | 119 10.7        | 11.6 10.2       | 3510 51.7       | 772 27.2        | 142 10.4        | ND 5.22         |
| <b>Percent Moisture</b>                 | <i>Extracted:</i> |                 |                 |                 |                 |                 |                 |
|   | <i>Analyzed:</i>  | Nov-12-09 14:41 | Nov-12-09 14:41 | Nov-12-09 14:41 | Nov-12-09 14:41 | Nov-12-09 14:41 | Nov-12-09 14:41 |
|   | <i>Units/RL:</i>  | % RL            | % RL            | % RL            | % RL            | % RL            | % RL            |
| Percent Moisture                        |                   | 6.85 1.00       | 1.48 1.00       | 3.37 1.00       | 8.09 1.00       | 4.20 1.00       | 4.18 1.00       |
| <b>TPH by SW8015 Mod</b>                | <i>Extracted:</i> | Nov-11-09 12:45 | Nov-11-09 12:45 | Nov-11-09 12:45 | Nov-11-09 12:45 | Nov-11-09 12:45 | Nov-11-09 12:45 |
|   | <i>Analyzed:</i>  | Nov-11-09 18:43 | Nov-11-09 19:10 | Nov-11-09 19:37 | Nov-11-09 20:03 | Nov-11-09 20:30 | Nov-11-09 20:57 |
|   | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |
| C6-C12 Gasoline Range Hydrocarbons      |                   | ND 16.1         | 31.1 15.2       | ND 15.5         | ND 16.3         | ND 15.7         | 216 15.6        |
| C12-C28 Diesel Range Hydrocarbons       |                   | 31.4 16.1       | 522 15.2        | 263 15.5        | 19.7 16.3       | 62.1 15.7       | 4190 15.6       |
| C28-C35 Oil Range Hydrocarbons          |                   | ND 16.1         | 134 15.2        | 74.8 15.5       | ND 16.3         | ND 15.7         | 290 15.6        |
| Total TPH                               |                   | 31.4 16.1       | 687 15.2        | 338 15.5        | 19.7 16.3       | 62.1 15.7       | 4696 15.6       |

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

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Version 1.014

  
Brent Barron, II  
Odessa Laboratory Manager



# Certificate of Analysis Summary 351779

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



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14-Inch Vac to Jal Legacy

Date Received in Lab: Wed Nov-11-09 08:12 am

Report Date: 16-NOV-09

Project Manager: Brent Barron, II

| <i>Analysis Requested</i>               | <i>Lab Id:</i>    | 351779-007      | 351779-008      | 351779-009      | 351779-010      | 351779-011      | 351779-012      |
|---|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|   | <i>Field Id:</i>  | GP # 7 @ 9 Ft   | GP # 8 @ 9 Ft   | GP # 9 @ 10 Ft  | GP # 10 @ 7 Ft  | GP # 11 @ 7 Ft  | GP # 12 @ 10 Ft |
|   | <i>Depth:</i>     |                 |                 |                 |                 |                 |                 |
|   | <i>Matrix:</i>    | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            |
|   | <i>Sampled:</i>   | Nov-10-09 13:30 | Nov-10-09 13:35 | Nov-10-09 13:40 | Nov-10-09 13:45 | Nov-10-09 13:50 | Nov-10-09 13:55 |
| <b>Inorganic Anions In Soil by E300</b> | <i>Extracted:</i> |                 |                 |                 |                 |                 |                 |
|   | <i>Analyzed:</i>  | Nov-12-09 08:42 | Nov-12-09 08:42 | Nov-12-09 08:42 | Nov-12-09 08:42 | Nov-12-09 08:42 | Nov-12-09 08:42 |
|   | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |
| Chloride                                |                   | 71.5 5.40       | 378 27.5        | 6.72 5.38       | 16.6 10.6       | 21.3 5.14       | ND 5.17         |
| <b>Percent Moisture</b>                 | <i>Extracted:</i> |                 |                 |                 |                 |                 |                 |
|   | <i>Analyzed:</i>  | Nov-12-09 14:41 | Nov-12-09 14:41 | Nov-12-09 14:41 | Nov-12-09 14:52 | Nov-12-09 14:52 | Nov-12-09 14:52 |
|   | <i>Units/RL:</i>  | % RL            | % RL            | % RL            | % RL            | % RL            | % RL            |
| Percent Moisture                        |                   | 7.38 1.00       | 9.23 1.00       | 7.03 1.00       | 5.46 1.00       | 2.80 1.00       | 3.25 1.00       |
| <b>TPH by SW8015 Mod</b>                | <i>Extracted:</i> |                 |                 |                 |                 |                 |                 |
|   | <i>Analyzed:</i>  | Nov-11-09 12:45 | Nov-11-09 12:45 | Nov-11-09 12:45 | Nov-11-09 12:45 | Nov-11-09 12:45 | Nov-11-09 12:45 |
|   | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |
| C6-C12 Gasoline Range Hydrocarbons      |                   | ND 16.2         | ND 16.5         | 36.4 16.1       | ND 15.9         | ND 15.4         | 688 15.5        |
| C12-C28 Diesel Range Hydrocarbons       |                   | 40.6 16.2       | ND 16.5         | 286 16.1        | 23.2 15.9       | 170 15.4        | 3670 15.5       |
| C28-C35 Oil Range Hydrocarbons          |                   | ND 16.2         | ND 16.5         | 16.2 16.1       | ND 15.9         | 18.6 15.4       | 227 15.5        |
| Total TPH                               |                   | 40.6 16.2       | ND 16.5         | 339 16.1        | 23.2 15.9       | 189 15.4        | 4585 15.5       |

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Version: 1014

Brent Barron, II  
Odessa Laboratory Manager



# Certificate of Analysis Summary 351779

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14-Inch Vac to Jal Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed Nov-11-09 08:12 am

Report Date: 16-NOV-09

Project Manager: Brent Barron, II

| <i>Analysis Requested</i>          | <i>Lab Id:</i>    | 351779-013      | 351779-014      | 351779-015      | 351779-016      |  |  |
|------------------------------------|-------------------|-----------------|-----------------|-----------------|-----------------|--|--|
|                                    | <i>Field Id:</i>  | GP # 13 @ 10 Ft | GP # 14 @ 12 Ft | GP # 15 @ 10 Ft | GP # 16 @ 10 Ft |  |  |
|                                    | <i>Depth:</i>     |                 |                 |                 |                 |  |  |
|                                    | <i>Matrix:</i>    | SOIL            | SOIL            | SOIL            | SOIL            |  |  |
|                                    | <i>Sampled:</i>   | Nov-10-09 14:00 | Nov-10-09 14:05 | Nov-10-09 14:10 | Nov-10-09 14:15 |  |  |
| Inorganic Anions In Soil by E300   | <i>Extracted:</i> |                 |                 |                 |                 |  |  |
|                                    | <i>Analyzed:</i>  | Nov-12-09 08:42 | Nov-12-09 08:42 | Nov-12-09 08:42 | Nov-12-09 08:42 |  |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |  |  |
| Chloride                           |                   | 219 22.8        | 9.32 5.21       | 62.9 5.43       | 9.57 6.29       |  |  |
| Percent Moisture                   | <i>Extracted:</i> |                 |                 |                 |                 |  |  |
|                                    | <i>Analyzed:</i>  | Nov-12-09 14:52 | Nov-12-09 14:52 | Nov-12-09 14:52 | Nov-12-09 14:52 |  |  |
|                                    | <i>Units/RL:</i>  | % RL            | % RL            | % RL            | % RL            |  |  |
| Percent Moisture                   |                   | 12.1 1.00       | 3.95 1.00       | 7.86 1.00       | 20.5 1.00       |  |  |
| TPH by SW8015 Mod                  | <i>Extracted:</i> | Nov-11-09 12:45 | Nov-11-09 12:45 | Nov-11-09 12:45 | Nov-11-09 12:45 |  |  |
|                                    | <i>Analyzed:</i>  | Nov-12-09 00:36 | Nov-12-09 01:03 | Nov-12-09 01:29 | Nov-12-09 01:55 |  |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |  |  |
| C6-C12 Gasoline Range Hydrocarbons |                   | ND 17.1         | 212 15.6        | ND 16.2         | ND 18.8         |  |  |
| C12-C28 Diesel Range Hydrocarbons  |                   | 51.9 17.1       | 2920 15.6       | 69.7 16.2       | ND 18.8         |  |  |
| C28-C35 Oil Range Hydrocarbons     |                   | ND 17.1         | 199 15.6        | ND 16.2         | ND 18.8         |  |  |
| Total TPH                          |                   | 51.9 17.1       | 3331 15.6       | 69.7 16.2       | ND 18.8         |  |  |

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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Version 1.014

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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| 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: 14-Inch Vac to Jal Legacy

Work Orders : 351779,

Project ID: 2009-092

Lab Batch #: 781303

Sample: 542950-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/11/09 17:26

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 124                 | 99.9               | 124                   | 70-135               |       |
| o-Terphenyl                   | 53.8                | 50.0               | 108                   | 70-135               |       |

Lab Batch #: 781303

Sample: 542950-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/11/09 17:52

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 127                 | 99.8               | 127                   | 70-135               |       |
| o-Terphenyl                   | 54.1                | 49.9               | 108                   | 70-135               |       |

Lab Batch #: 781303

Sample: 542950-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/11/09 18:16

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 92.8                | 99.8               | 93                    | 70-135               |       |
| o-Terphenyl                   | 58.3                | 49.9               | 117                   | 70-135               |       |

Lab Batch #: 781303

Sample: 351779-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/11/09 18:43

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 88.2                | 99.9               | 88                    | 70-135               |       |
| o-Terphenyl                   | 55.4                | 50.0               | 111                   | 70-135               |       |

Lab Batch #: 781303

Sample: 351779-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/11/09 19:10

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 76.1                | 99.9               | 76                    | 70-135               |       |
| o-Terphenyl                   | 45.3                | 50.0               | 91                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal Legacy

Work Orders : 351779,

Project ID: 2009-092

Lab Batch #: 781303

Sample: 351779-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/11/09 19:37

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 86.9                | 99.7               | 87                    | 70-135               |       |
| o-Terphenyl                   | 53.8                | 49.9               | 108                   | 70-135               |       |

Lab Batch #: 781303

Sample: 351779-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/11/09 20:03

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 87.1                | 100                | 87                    | 70-135               |       |
| o-Terphenyl                   | 55.1                | 50.0               | 110                   | 70-135               |       |

Lab Batch #: 781303

Sample: 351779-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/11/09 20:30

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 84.5                | 100                | 85                    | 70-135               |       |
| o-Terphenyl                   | 52.0                | 50.0               | 104                   | 70-135               |       |

Lab Batch #: 781303

Sample: 351779-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/11/09 20:57

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 86.7                | 99.8               | 87                    | 70-135               |       |
| o-Terphenyl                   | 54.7                | 49.9               | 110                   | 70-135               |       |

Lab Batch #: 781303

Sample: 351779-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/11/09 21:25

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 87.2                | 100                | 87                    | 70-135               |       |
| o-Terphenyl                   | 54.8                | 50.0               | 110                   | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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

## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal Legacy

Work Orders : 351779,

Project ID: 2009-092

Lab Batch #: 781303

Sample: 351779-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/11/09 21:52

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 81.7                | 99.8               | 82                    | 70-135               |       |
| o-Terphenyl                   | 51.1                | 49.9               | 102                   | 70-135               |       |

Lab Batch #: 781303

Sample: 351779-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/11/09 22:19

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 94.4                | 100                | 94                    | 70-135               |       |
| o-Terphenyl                   | 60.3                | 50.0               | 121                   | 70-135               |       |

Lab Batch #: 781303

Sample: 351779-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/11/09 22:47

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 76.0                | 100                | 76                    | 70-135               |       |
| o-Terphenyl                   | 47.1                | 50.0               | 94                    | 70-135               |       |

Lab Batch #: 781303

Sample: 351779-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/11/09 23:41

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 70.8                | 99.6               | 71                    | 70-135               |       |
| o-Terphenyl                   | 43.9                | 49.8               | 88                    | 70-135               |       |

Lab Batch #: 781303

Sample: 351779-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/12/09 00:08

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 103                 | 100                | 103                   | 70-135               |       |
| o-Terphenyl                   | 50.3                | 50.0               | 101                   | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal Legacy

Work Orders : 351779,

Project ID: 2009-092

Lab Batch #: 781303

Sample: 351779-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/12/09 00:36

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 85.0             | 100             | 85              | 70-135            |       |
| o-Terphenyl       | 53.3             | 50.0            | 107             | 70-135            |       |

Lab Batch #: 781303

Sample: 351779-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/12/09 01:03

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 95.4             | 100             | 95              | 70-135            |       |
| o-Terphenyl       | 59.0             | 50.0            | 118             | 70-135            |       |

Lab Batch #: 781303

Sample: 351779-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/12/09 01:29

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 88.4             | 99.7            | 89              | 70-135            |       |
| o-Terphenyl       | 55.4             | 49.9            | 111             | 70-135            |       |

Lab Batch #: 781303

Sample: 351779-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/12/09 01:55

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 89.9             | 99.5            | 90              | 70-135            |       |
| o-Terphenyl       | 57.0             | 49.8            | 114             | 70-135            |       |

Lab Batch #: 781303

Sample: 351779-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/12/09 04:07

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 121              | 100             | 121             | 70-135            |       |
| o-Terphenyl       | 54.7             | 50.0            | 109             | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal Legacy

Work Orders : 351779,

Lab Batch #: 781303

Sample: 351779-001 SD / MSD

Project ID: 2009-092

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/12/09 04:33

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount<br>Found<br>[A] | True<br>Amount<br>[B] | Recovery<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|-------------------------------|------------------------|-----------------------|-----------------------|-------------------------|-------|
| 1-Chlorooctane                | 128                    | 100                   | 128                   | 70-135                  |       |
| o-Terphenyl                   | 53.5                   | 50.0                  | 107                   | 70-135                  |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# Blank Spike Recovery



**Project Name: 14-Inch Vac to Jal Legacy**

**Work Order #: 351779**

**Project ID:**

**2009-092**

**Lab Batch #: 781290**

**Sample: 781290-1-BKS**

**Matrix: Solid**

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

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

**Analyst: LATCOR**

**Reporting Units: mg/kg**

**Batch #: 1**

## BLANK /BLANK SPIKE RECOVERY STUDY

| Inorganic Anions In Soil by E300<br>Analytes | Blank Result<br>[A] | Spike Added<br>[B] | Blank Spike Result<br>[C] | Blank Spike %R<br>[D] | Control Limits<br>%R | Flags |
|--|---------------------|--------------------|---------------------------|-----------------------|----------------------|-------|
| Chloride                                     | ND                  | 10.0               | 10.6                      | 106                   | 75-125               |       |

**Lab Batch #: 781411**

**Sample: 781411-1-BKS**

**Matrix: Solid**

**Date Analyzed: 11/12/2009**

**Date Prepared: 11/12/2009**

**Analyst: LATCOR**

**Reporting Units: mg/kg**

**Batch #: 1**

## BLANK /BLANK SPIKE RECOVERY STUDY

| Inorganic Anions In Soil by E300<br>Analytes | Blank Result<br>[A] | Spike Added<br>[B] | Blank Spike Result<br>[C] | Blank Spike %R<br>[D] | Control Limits<br>%R | Flags |
|--|---------------------|--------------------|---------------------------|-----------------------|----------------------|-------|
| Chloride                                     | ND                  | 10.0               | 10.4                      | 104                   | 75-125               |       |

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

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

BRL - Below Reporting Limit



## BS / BSD Recoveries



Project Name: 14-Inch Vac to Jal Legacy

Work Order #: 351779

Analyst: BEV

Date Prepared: 11/11/2009

Project ID: 2009-092

Date Analyzed: 11/11/2009

Lab Batch ID: 781303

Sample: 542950-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| TPH by SW8015 Mod                  | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes                           |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| C6-C12 Gasoline Range Hydrocarbons | ND                            | 999                   | 892                             | 89                          | 998                   | 895                                       | 90                            | 0        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | ND                            | 999                   | 808                             | 81                          | 998                   | 835                                       | 84                            | 3        | 70-135                  | 35                        |      |

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

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

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

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS Recoveries

Project Name: 14-Inch Vac to Jal Legacy



Work Order #: 351779

Lab Batch #: 781290

Date Analyzed: 11/11/2009

QC- Sample ID: 351720-001 S

Reporting Units: mg/kg

Project ID: 2009-092

Analyst: LATCOR

Date Prepared: 11/11/2009

Batch #: 1

Matrix: Soil

| MATRIX / MATRIX SPIKE RECOVERY STUDY |                          |                 |                          |        |                   |      |
|--------------------------------------|--------------------------|-----------------|--------------------------|--------|-------------------|------|
| Inorganic Anions by EPA 300          | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | %R [D] | Control Limits %R | Flag |
| Analytes                             |                          |                 |                          |        |                   |      |
| Chloride                             | 2120                     | 1300            | 3700                     | 122    | 75-125            |      |

Lab Batch #: 781411

Date Analyzed: 11/12/2009

QC- Sample ID: 351779-006 S

Reporting Units: mg/kg

Date Prepared: 11/12/2009

Analyst: LATCOR

Batch #: 1

Matrix: Soil

| MATRIX / MATRIX SPIKE RECOVERY STUDY |                          |                 |                          |        |                   |      |
|--------------------------------------|--------------------------|-----------------|--------------------------|--------|-------------------|------|
| Inorganic Anions by EPA 300          | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | %R [D] | Control Limits %R | Flag |
| Analytes                             |                          |                 |                          |        |                   |      |
| Chloride                             | ND                       | 115             | 120                      | 104    | 75-125            |      |

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

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

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - M MSD Recoveries



Project Name: 14-Inch Vac to Jal Legacy

Work Order #: 351779

Project ID: 2009-092

Lab Batch ID: 781303

QC- Sample ID: 351779-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 11/12/2009

Date Prepared: 11/11/2009

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| TPH by SW8015 Mod<br><br>Analytes  | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
|                                    |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
| C6-C12 Gasoline Range Hydrocarbons | ND                                | 1070                  | 934                            | 87                            | 1070                  | 951                                      | 89                          | 2        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | 31.4                              | 1070                  | 837                            | 75                            | 1070                  | 864                                      | 78                          | 4        | 70-135                  | 35                        |      |

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

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

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

**Project Name: 14-Inch Vac to Jal Legacy**

**Work Order #: 351779**

**Lab Batch #:** 781290  
**Date Analyzed:** 11/11/2009  
**QC- Sample ID:** 351720-001 D  
**Reporting Units:** mg/kg

**Date Prepared:** 11/11/2009  
**Batch #:** 1

**Project ID:** 2009-092  
**Analyst:** LATCOR  
**Matrix:** Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Inorganic Anions In Soil by E300   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Chloride                           | 2120                     | 2110                        | 0   | 20                  |      |

**Lab Batch #:** 781411  
**Date Analyzed:** 11/12/2009  
**QC- Sample ID:** 351779-006 D  
**Reporting Units:** mg/kg

**Date Prepared:** 11/12/2009  
**Batch #:** 1

**Analyst:** LATCOR  
**Matrix:** Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Inorganic Anions In Soil by E300   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Chloride                           | ND                       | ND                          | NC  | 20                  |      |

**Lab Batch #:** 781403  
**Date Analyzed:** 11/12/2009  
**QC- Sample ID:** 351716-016 D  
**Reporting Units:** %

**Date Prepared:** 11/12/2009  
**Batch #:** 1

**Analyst:** BEV  
**Matrix:** Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 9.47                     | 8.39                        | 12  | 20                  |      |

**Lab Batch #:** 781406  
**Date Analyzed:** 11/12/2009  
**QC- Sample ID:** 351779-010 D  
**Reporting Units:** %

**Date Prepared:** 11/12/2009  
**Batch #:** 1

**Analyst:** BEV  
**Matrix:** Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 5.46                     | 5.87                        | 7   | 20                  |      |

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

# Environmental Lab of Texas

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East  
Odessa, Texas 79766

Phone: 432-663-1800  
Fax: 432-663-1713

Project Manager: Curt Stanley PAGE 01 OF 02

Project Name: 14-Inch Vac to Jail Legacy

Company Name: Basin Environmental Service Technologies, LLC

Project #: 2009-092

Company Address: 2800 Plains Hwy

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA - J. Henry

Telephone No: (575) 441-2244

Fax No: (575) 398-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: [Signature]

e-mail: cdstanley@basin-consulting.com

(lab use only)  
ORDER #: 351779

| LAB # (lab use only) | FIELD CODE    | Beginning Depth | Ending Depth | Date Sampled | Time Sampled | Field Filtered | Total #. of Containers | Ice | HNO <sub>3</sub> | HCl (VOA X 2) | H <sub>2</sub> SO <sub>4</sub> | NaOH | Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> | None (PAH) | Other (Specify) | DW=Drinking Water SL=Sludge<br>GW = Groundwater S=Soil/Solid<br>NP=Non-Potable Specify Other | TPH: 418.1 (8015B) | TPH: TX 1005 TX 1006 | Cations (Ca, Mg, Na, K) | Anions (Cl, SO <sub>4</sub> , Alkalinity) | SAR / ESP / CEC | Metals: As Ag Ba Cd Cr Pb Hg Se | Volatiles | Semivolatiles | BTEX 8021B/8030 or BTEX 8280 | RCI | N.O.R.M. | PAH | EPA Paint Filter Test | Chloride (300) | RUSH TAT (Pre-Schedule) 24, 48 | Standard TAT |
|----------------------|---------------|-----------------|--------------|--------------|--------------|----------------|------------------------|-----|------------------|---------------|--------------------------------|------|---|------------|-----------------|--|--------------------|----------------------|-------------------------|---|-----------------|---------------------------------|-----------|---------------|------------------------------|-----|----------|-----|-----------------------|----------------|--------------------------------|--------------|
| 01                   | GP #1 @ 6 ft  |                 |              | 11/10/2009   | 1300         |                | 1                      | X   |                  |               |                                |      |   |            |                 | Soil   | X                  |                      |                         |   |                 |                                 |           |               |                              |     |          |     |                       | X              |                                | X            |
| 02                   | GP #2 @ Grade |                 |              | 11/10/2009   | 1305         |                | 1                      | X   |                  |               |                                |      |   |            |                 | Soil   | X                  |                      |                         |   |                 |                                 |           |               |                              |     |          |     |                       | X              |                                | X            |
| 03                   | GP #3 @ Grade |                 |              | 11/10/2009   | 1310         |                | 1                      | X   |                  |               |                                |      |   |            |                 | Soil   | X                  |                      |                         |   |                 |                                 |           |               |                              |     |          |     |                       | X              |                                | X            |
| 04                   | GP #4 @ 5 ft  |                 |              | 11/10/2009   | 1315         |                | 1                      | X   |                  |               |                                |      |   |            |                 | Soil   | X                  |                      |                         |   |                 |                                 |           |               |                              |     |          |     |                       | X              |                                | X            |
| 05                   | GP #5 @ 7 ft  |                 |              | 11/10/2009   | 1320         |                | 1                      | X   |                  |               |                                |      |   |            |                 | Soil   | X                  |                      |                         |   |                 |                                 |           |               |                              |     |          |     |                       | X              |                                | X            |
| 06                   | GP #6 @ 9 ft  |                 |              | 11/10/2009   | 1325         |                | 1                      | X   |                  |               |                                |      |   |            |                 | Soil   | X                  |                      |                         |   |                 |                                 |           |               |                              |     |          |     |                       | X              |                                | X            |
| 07                   | GP #7 @ 9 ft  |                 |              | 11/10/2009   | 1330         |                | 1                      | X   |                  |               |                                |      |   |            |                 | Soil   | X                  |                      |                         |   |                 |                                 |           |               |                              |     |          |     |                       | X              |                                | X            |
| 08                   | GP #8 @ 9 ft  |                 |              | 11/10/2009   | 1335         |                | 1                      | X   |                  |               |                                |      |   |            |                 | Soil   | X                  |                      |                         |   |                 |                                 |           |               |                              |     |          |     |                       | X              |                                | X            |
| 09                   | GP #9 @ 10 ft |                 |              | 11/10/2009   | 1340         |                | 1                      | X   |                  |               |                                |      |   |            |                 | Soil   | X                  |                      |                         |   |                 |                                 |           |               |                              |     |          |     |                       | X              |                                | X            |
| 10                   | GP #10 @ 7 ft |                 |              | 11/10/2009   | 1345         |                | 1                      | X   |                  |               |                                |      |   |            |                 | Soil   | X                  |                      |                         |   |                 |                                 |           |               |                              |     |          |     |                       | X              |                                | X            |

### Special Instructions:

|                                     |                       |                    |                                 |                       |                   |
|-------------------------------------|-----------------------|--------------------|---------------------------------|-----------------------|-------------------|
| Relinquished by: <u>[Signature]</u> | Date: <u>11/10/09</u> | Time: <u>08:12</u> | Received by:                    | Date:                 | Time:             |
| Relinquished by: <u>[Signature]</u> | Date:                 | Time:              | Received by:                    | Date:                 | Time:             |
| Relinquished by:                    | Date:                 | Time:              | Received by: <u>[Signature]</u> | Date: <u>11/11/09</u> | Time: <u>8:12</u> |

Laboratory Comments: 429.0  
 Sample Containers Intact? Y  
 VOCs Free of Headspace? Y  
 Labels on container(s) Y  
 Custody seals on container(s) Y  
 Custody seals on cooler(s) Y  
 Sample Hand Delivered by Sampler/Cust Rep? Y  
 by Courier? Y UPS Y DHL Y FedEx Y Lone Star Y  
 Temperature Upon Receipt: -4 °C

# 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 02 OF 02

Project Name: 14-Inch Vac to Jal Legacy

Company Name: Basin Environmental Service Technologies, LLC

Project #: 2009-092

Company Address: 2800 Plains Hwy

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA - J. Henry

Telephone No: (575) 441-2244

Fax No: (575) 398-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: *Curt Stanley*

e-mail: cdstanley@basin-consulting.com

(lab use only)  
ORDER #: 351779

| LAB # (lab use only) | FIELD CODE     | Beginning Depth | Ending Depth | Date Sampled | Time Sampled | Field Filtered | Total #. of Containers | Ice | HNO <sub>3</sub> | HCl (VOA X 2) | H <sub>2</sub> SO <sub>4</sub> | NaOH | Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub> | None (PAH) | Other (Specify) | DW-Drinking Water SL-Sludge<br>GW = Groundwater S-Soil/Solid<br>NP-Non-Petroleum Specify Other | TPH: 418.1 8015M 8015I | TPH: TX 1005 TX 1006 | Carbon (Ca, Mg, Na, K) | Anions (Cl, SO <sub>4</sub> , Alkalinity) | SAR / ESP / CEC | Metals: As Ag Ba Cd Cr Pb Hg Se | Volatiles | Semivolatiles | BTEX 8021B/6030 or BTEX 8280 | RCI | N.O.R.M. | PAH | EPA Paint Filter Test | Chloride E 300 | RUSH TAT (Pre-Schedule) 24, 48 | Standard TAT |   |
|----------------------|----------------|-----------------|--------------|--------------|--------------|----------------|------------------------|-----|------------------|---------------|--------------------------------|------|---|------------|-----------------|--|------------------------|----------------------|------------------------|---|-----------------|---------------------------------|-----------|---------------|------------------------------|-----|----------|-----|-----------------------|----------------|--------------------------------|--------------|---|
| 11                   | GP #11 @ 7 ft  |                 |              | 11/10/2009   | 1350         |                | 1                      | X   |                  |               |                                |      |   |            |                 | Soil   | X                      |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                | X                              |              | X |
| 12                   | GP #12 @ 10 ft |                 |              | 11/10/2009   | 1355         |                | 1                      | X   |                  |               |                                |      |   |            |                 | Soil   | X                      |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                | X                              |              | X |
| 13                   | GP #13 @ 10 ft |                 |              | 11/10/2009   | 1400         |                | 1                      | X   |                  |               |                                |      |   |            |                 | Soil   | X                      |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                | X                              |              | X |
| 14                   | GP #14 @ 12 ft |                 |              | 11/10/2009   | 1405         |                | 1                      | X   |                  |               |                                |      |   |            |                 | Soil   | X                      |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                | X                              |              | X |
| 15                   | GP #15 @ 10 ft |                 |              | 11/10/2009   | 1410         |                | 1                      | X   |                  |               |                                |      |   |            |                 | Soil   | X                      |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                | X                              |              | X |
| 16                   | GP #16 @ 10 ft |                 |              | 11/10/2009   | 1015         |                | 1                      | X   |                  |               |                                |      |   |            |                 | Soil   | X                      |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                | X                              |              | X |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     |                       |                |                                |              |   |
|                      |                |                 |              |              |              |                |                        |     |                  |               |                                |      |   |            |                 |  |                        |                      |                        |   |                 |                                 |           |               |                              |     |          |     | </                    |                |                                |              |   |

### Special Instructions:

|   |                       |                   |  |                       |                   |
|---|-----------------------|-------------------|--|-----------------------|-------------------|
| Relinquished by: <u><i>Curt Stanley</i></u> | Date: <u>11/11/09</u> | Time: <u>0812</u> | Received by:                                 | Date:                 | Time:             |
| Relinquished by:                            | Date:                 | Time:             | Received by:                                 | Date:                 | Time:             |
| Relinquished by:                            | Date:                 | Time:             | Received by ELOT: <u><i>Chris Valdez</i></u> | Date: <u>11/11/09</u> | Time: <u>8:12</u> |

Laboratory Comments: 42 g.c

Sample Containers Intact? Y

VOCs Free of Headspace? Y

Labels on container(s) 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: — °C

# Environmental Lab of Texas

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

Client: Basin / Plains  
 Date/ Time: 11/11/09 8:12  
 Lab ID #: 351779  
 Initials: gnd

### Sample Receipt Checklist

|     |  |            |    | Client Initials          |
|-----|--|------------|----|--------------------------|
| #1  | Temperature of container/ cooler?                      | <u>Yes</u> | No | <u>- .4</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 | <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 355590**

**for**

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

**Project Manager: Jason Henry**

**14-Inch Vac to Jal Legacy**

**2009-092**

**17-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)



17-DEC-09

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

Reference: XENCO Report No: **355590**  
**14-Inch Vac to Jal Legacy**  
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 355590. 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. 355590 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 355590



PLAINS ALL AMERICAN EH&S, Midland, TX

14-Inch Vac to Jal Legacy

| Sample Id    | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|--------------|--------|-----------------|--------------|---------------|
| SB # 4 @ 10' | S      | Dec-10-09 09:15 |              | 355590-001    |
| SB # 4 @ 20' | S      | Dec-10-09 09:40 |              | 355590-002    |
| SB # 4 @ 30' | S      | Dec-10-09 10:25 |              | 355590-003    |
| SB # 4 @ 40' | S      | Dec-10-09 11:00 |              | 355590-004    |
| SB # 4 @ 50' | S      | Dec-10-09 11:55 |              | 355590-005    |
| SB # 5 @ 10' | S      | Dec-10-09 13:10 |              | 355590-006    |
| SB # 5 @ 20' | S      | Dec-10-09 13:40 |              | 355590-007    |
| SB # 5 @ 30' | S      | Dec-10-09 14:15 |              | 355590-008    |
| SB # 5 @ 40' | S      | Dec-10-09 15:00 |              | 355590-009    |
| SB # 5 @ 45' | S      | Dec-10-09 15:50 |              | 355590-010    |



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: 14-Inch Vac to Jal Legacy*

*Project ID: 2009-092*

*Work Order Number: 355590*

*Report Date: 17-DEC-09*

*Date Received: 12/14/2009*

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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-785868 Inorganic Anions by EPA 300

None

Batch: LBA-785882 Percent Moisture

None

Batch: LBA-785886 Percent Moisture

None

Batch: LBA-785951 Inorganic Anions In Soil by E300

None



# Certificate of Analysis Summary 355590

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14-Inch Vac to Jal Legacy

Date Received in Lab: Mon Dec-14-09 05:20 pm


Report Date: 17-DEC-09

Project Manager: Brent Barron, II

|   |                   |                 |                 |                 |                 |                 |                 |
|---|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <b>Analysis Requested</b>               | <b>Lab Id:</b>    | 355590-001      | 355590-002      | 355590-003      | 355590-004      | 355590-005      | 355590-006      |
|   | <b>Field Id:</b>  | SB # 4 @ 10'    | SB # 4 @ 20'    | SB # 4 @ 30'    | SB # 4 @ 40'    | SB # 4 @ 50'    | SB # 5 @ 10'    |
|   | <b>Depth:</b>     |                 |                 |                 |                 |                 |                 |
|   | <b>Matrix:</b>    | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            |
|   | <b>Sampled:</b>   | Dec-10-09 09:15 | Dec-10-09 09:40 | Dec-10-09 10:25 | Dec-10-09 11:00 | Dec-10-09 11:55 | Dec-10-09 13:10 |
| <b>Inorganic Anions In Soil by E300</b> | <b>Extracted:</b> |                 |                 |                 |                 |                 |                 |
|   | <b>Analyzed:</b>  | Dec-15-09 14:06 | Dec-15-09 14:06 | Dec-15-09 14:06 | Dec-15-09 14:06 | Dec-15-09 14:06 | Dec-15-09 14:06 |
|   | <b>Units/RL:</b>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |
| Chloride                                |                   | 85.3 5.77       | 26.8 5.55       | 61.8 5.38       | 26.5 5.17       | ND 5.02         | 117 5.64        |
| <b>Percent Moisture</b>                 | <b>Extracted:</b> |                 |                 |                 |                 |                 |                 |
|   | <b>Analyzed:</b>  | Dec-15-09 17:00 | Dec-15-09 17:00 | Dec-15-09 17:00 | Dec-15-09 17:00 | Dec-15-09 17:00 | Dec-15-09 17:00 |
|   | <b>Units/RL:</b>  | % RL            | % RL            | % RL            | % RL            | % RL            | % RL            |
| Percent Moisture                        |                   | 13.4 1.00       | 9.89 1.00       | 7.01 1.00       | 3.27 1.00       | 12.1 1.00       | 11.3 1.00       |

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end 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, II  
Odessa Laboratory Manager



# Certificate of Analysis Summary 355590

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14-Inch Vac to Jal Legacy

Date Received in Lab: Mon Dec-14-09 05:20 pm


Report Date: 17-DEC-09

Project Manager: Brent Barron, II

|   |                   |                 |                 |                 |                 |  |  |
|---|-------------------|-----------------|-----------------|-----------------|-----------------|--|--|
| <b>Analysis Requested</b>               | <b>Lab Id:</b>    | 355590-007      | 355590-008      | 355590-009      | 355590-010      |  |  |
|   | <b>Field Id:</b>  | SB # 5 @ 20'    | SB # 5 @ 30'    | SB # 5 @ 40'    | SB # 5 @ 45'    |  |  |
|   | <b>Depth:</b>     |                 |                 |                 |                 |  |  |
|   | <b>Matrix:</b>    | SOIL            | SOIL            | SOIL            | SOIL            |  |  |
|   | <b>Sampled:</b>   | Dec-10-09 13:40 | Dec-10-09 14:15 | Dec-10-09 15:00 | Dec-10-09 15:50 |  |  |
| <b>Inorganic Anions In Soil by E300</b> | <b>Extracted:</b> |                 |                 |                 |                 |  |  |
|   | <b>Analyzed:</b>  | Dec-16-09 08:38 | Dec-16-09 08:38 | Dec-16-09 08:38 | Dec-16-09 08:38 |  |  |
|   | <b>Units/RL:</b>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |  |  |
| Chloride                                |                   | 263 11.2        | 55.5 5.23       | 6.71 5.04       | 183 10.4        |  |  |
| <b>Percent Moisture</b>                 | <b>Extracted:</b> |                 |                 |                 |                 |  |  |
|   | <b>Analyzed:</b>  | Dec-15-09 17:00 | Dec-15-09 17:00 | Dec-15-09 17:00 | Dec-15-09 17:00 |  |  |
|   | <b>Units/RL:</b>  | % RL            | % RL            | % RL            | % RL            |  |  |
| Percent Moisture                        |                   | 10.5 1.00       | 4.41 1.00       | ND 1.00         | 3.44 1.00       |  |  |

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

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Brent Barron, 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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2505 North Falkenburg Rd, Tampa, FL 33619  
5757 NW 158th St, Miami Lakes, FL 33014  
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842 Cantwell Lane, Corpus Christi, TX 78408

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



## Blank Spike Recovery



**Project Name: 14-Inch Vac to Jal Legacy**

**Work Order #: 355590**

**Project ID:**

**2009-092**

**Lab Batch #: 785868**

**Sample: 785868-1-BKS**

**Matrix: Solid**

**Date Analyzed: 12/15/2009**

**Date Prepared: 12/15/2009**

**Analyst: LATCOR**

**Reporting Units: mg/kg**

**Batch #: 1**

### BLANK /BLANK SPIKE RECOVERY STUDY

| Inorganic Anions In Soil by E300<br>Analytes | Blank<br>Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|--|------------------------|-----------------------|---------------------------------|-----------------------------|-------------------------|-------|
| Chloride                                     | ND                     | 10.0                  | 10.8                            | 108                         | 75-125                  |       |

**Lab Batch #: 785951**

**Sample: 785951-1-BKS**

**Matrix: Solid**

**Date Analyzed: 12/16/2009**

**Date Prepared: 12/16/2009**

**Analyst: LATCOR**

**Reporting Units: mg/kg**

**Batch #: 1**

### BLANK /BLANK SPIKE RECOVERY STUDY

| Inorganic Anions In Soil by E300<br>Analytes | Blank<br>Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|--|------------------------|-----------------------|---------------------------------|-----------------------------|-------------------------|-------|
| Chloride                                     | ND                     | 10.0                  | 10.6                            | 106                         | 75-125                  |       |

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

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

BRL - Below Reporting Limit



## Form 3 - MS Recoveries

Project Name: 14-Inch Vac to Jal Legacy



Work Order #: 355590

Lab Batch #: 785868

Date Analyzed: 12/15/2009

QC- Sample ID: 355585-001 S

Reporting Units: mg/kg

Project ID: 2009-092

Analyst: LATCOR

Date Prepared: 12/15/2009

Batch #: 1

Matrix: Soil

| MATRIX / MATRIX SPIKE RECOVERY STUDY |                          |                 |                          |        |                   |      |
|--------------------------------------|--------------------------|-----------------|--------------------------|--------|-------------------|------|
| Inorganic Anions by EPA 300          | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | %R [D] | Control Limits %R | Flag |
| Analytes                             |                          |                 |                          |        |                   |      |
| Chloride                             | 255                      | 1260            | 1640                     | 110    | 75-125            |      |

Lab Batch #: 785951

Date Analyzed: 12/16/2009

QC- Sample ID: 355590-008 S

Reporting Units: mg/kg

Date Prepared: 12/16/2009

Analyst: LATCOR

Batch #: 1

Matrix: Soil

| MATRIX / MATRIX SPIKE RECOVERY STUDY |                          |                 |                          |        |                   |      |
|--------------------------------------|--------------------------|-----------------|--------------------------|--------|-------------------|------|
| Inorganic Anions by EPA 300          | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | %R [D] | Control Limits %R | Flag |
| Analytes                             |                          |                 |                          |        |                   |      |
| Chloride                             | 55.5                     | 112             | 172                      | 104    | 75-125            |      |

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

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

All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit



## Sample Duplicate Recovery

Project Name: 14-Inch Vac to Jal Legacy

Work Order #: 355590

Lab Batch #: 785868

Date Analyzed: 12/15/2009

QC- Sample ID: 355585-001 D

Reporting Units: mg/kg

Project ID: 2009-092

Analyst: LATCOR

Matrix: Soil

Date Prepared: 12/15/2009

Batch #: 1

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Inorganic Anions In Soil by E300   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Chloride                           | 255                      | 241                         | 6   | 20                  |      |

Lab Batch #: 785951

Date Analyzed: 12/16/2009

QC- Sample ID: 355590-008 D

Reporting Units: mg/kg

Date Prepared: 12/16/2009

Batch #: 1

Analyst: LATCOR

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Inorganic Anions In Soil by E300   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Chloride                           | 55.5                     | 56.7                        | 2   | 20                  |      |

Lab Batch #: 785882

Date Analyzed: 12/15/2009

QC- Sample ID: 355585-001 D

Reporting Units: %

Date Prepared: 12/15/2009

Batch #: 1

Analyst: WRU

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 20.9                     | 22.4                        | 7   | 20                  |      |

Lab Batch #: 785886

Date Analyzed: 12/15/2009

QC- Sample ID: 355590-007 D

Reporting Units: %

Date Prepared: 12/15/2009

Batch #: 1

Analyst: WRU

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 10.5                     | 11.4                        | 9   | 20                  |      |

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

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

BRL - Below Reporting Limit



# Environmental Lab of Texas

## 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

Project Name: 14-Inch Vac to Jal Legacy

Company Name: Basin Environmental Service Technologies, LLC

Project #: 2009-092

Company Address: P. O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA - J. Henry

Telephone No: (505) 441-2244

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: [Signature]

e-mail: cstanley@basinenv.com

(lab use only)

ORDER #:

355590

| LAB # (lab use only) | FIELD CODE  | Beginning Depth | Ending Depth | Date Sampled | Time Sampled | Field Filtered | Total # of Containers | 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 8015B | TPH: TX 1006 TX 1008 | Cations (Ca, Mg, Na, K) | Anions (Cl, SO <sub>4</sub> , Alkalinity) | SAR / ESP / CEC | Metals: As Ag Ba Cd Cr Pb Hg Se | Volatiles | Semi-volatiles | BTEX 8021B/9030 or BTEX 8280 | RCI | N.O.R.M. | PAH 8270 | TDS (EPA METHOD SM 2540) | CHLORIDES E 300 | RUSH TAT (Pre-Schedule) 24, 48, 72 hrs | Standard TAT |
|----------------------|-------------|-----------------|--------------|--------------|--------------|----------------|-----------------------|-----|------------------|-----|--------------------------------|------|---|------|-----------------|---------------------------------|---------------------------------|---------------------------------|------------------------|----------------------|-------------------------|---|-----------------|---------------------------------|-----------|----------------|------------------------------|-----|----------|----------|--------------------------|-----------------|--|--------------|
| 01                   | SB #4 @ 10' |                 |              | 12/10/2009   | 0915         |                | 1                     | X   |                  |     |                                |      |   |      |                 | Soil                            |                                 |                                 |                        |                      |                         |   |                 |                                 |           |                |                              |     |          |          |                          | X               |  | X            |
| 02                   | SB #4 @ 20' |                 |              | 12/10/2009   | 0940         |                | 1                     | X   |                  |     |                                |      |   |      |                 | Soil                            |                                 |                                 |                        |                      |                         |   |                 |                                 |           |                |                              |     |          |          |                          | X               |  | X            |
| 03                   | SB #4 @ 30' |                 |              | 12/10/2009   | 1025         |                | 1                     | X   |                  |     |                                |      |   |      |                 | Soil                            |                                 |                                 |                        |                      |                         |   |                 |                                 |           |                |                              |     |          |          |                          | X               |  | X            |
| 04                   | SB #4 @ 40' |                 |              | 12/10/2009   | 1100         |                | 1                     | X   |                  |     |                                |      |   |      |                 | Soil                            |                                 |                                 |                        |                      |                         |   |                 |                                 |           |                |                              |     |          |          |                          | X               |  | X            |
| 05                   | SB #4 @ 50' |                 |              | 12/10/2009   | 1155         |                | 1                     | X   |                  |     |                                |      |   |      |                 | Soil                            |                                 |                                 |                        |                      |                         |   |                 |                                 |           |                |                              |     |          |          |                          | X               |  | X            |
| 06                   | SB #5 @ 10' |                 |              | 12/10/2009   | 1310         |                | 1                     | X   |                  |     |                                |      |   |      |                 | Soil                            |                                 |                                 |                        |                      |                         |   |                 |                                 |           |                |                              |     |          |          |                          | X               |  | X            |
| 07                   | SB #5 @ 20' |                 |              | 12/10/2009   | 1340         |                | 1                     | X   |                  |     |                                |      |   |      |                 | Soil                            |                                 |                                 |                        |                      |                         |   |                 |                                 |           |                |                              |     |          |          |                          | X               |  | X            |
| 08                   | SB #5 @ 30' |                 |              | 12/10/2009   | 1415         |                | 1                     | X   |                  |     |                                |      |   |      |                 | Soil                            |                                 |                                 |                        |                      |                         |   |                 |                                 |           |                |                              |     |          |          |                          | X               |  | X            |
| 09                   | SB #5 @ 40' |                 |              | 12/10/2009   | 1500         |                | 1                     | X   |                  |     |                                |      |   |      |                 | Soil                            |                                 |                                 |                        |                      |                         |   |                 |                                 |           |                |                              |     |          |          |                          | X               |  | X            |
| 10                   | SB #5 @ 45' |                 |              | 12/10/2009   | 1550         |                | 1                     | X   |                  |     |                                |      |   |      |                 | Soil                            |                                 |                                 |                        |                      |                         |   |                 |                                 |           |                |                              |     |          |          |                          | X               |  | X            |

Special Instructions:

|                                     |                       |                   |                                       |                       |                   |
|-------------------------------------|-----------------------|-------------------|---------------------------------------|-----------------------|-------------------|
| Relinquished by: <u>[Signature]</u> | Date: <u>12/14/09</u> | Time: <u>1720</u> | Received by:                          | Date:                 | Time:             |
| Relinquished by:                    | Date:                 | Time:             | Received by:                          | Date:                 | Time:             |
| Relinquished by:                    | Date:                 | Time:             | Received by: ELOT: <u>[Signature]</u> | Date: <u>12-14-09</u> | Time: <u>1720</u> |

Laboratory Comments:

Sample Cleaners Used? ☒ N  
VOCs Free of Headspace? ☒ N  
Labels on container(s) ☒ N  
Custody seals on container(s) ☒ N  
Custody tags on container(s) ☒ N  
Sample Hand Delivered by Sample Client Rep.? ☒ N  
by Courier? UPS DHL FedEx Lone Star  
Temperature Upon Receipt: 2.6 °C

# Environmental Lab of Texas

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

Client: Plains / Basin  
 Date/ Time: 12-14-09 @ 1720  
 Lab ID #: 355590  
 Initials: JMF

### Sample Receipt Checklist

|     |  |            |           | Client Initials          |
|-----|--|------------|-----------|--------------------------|
| #1  | Temperature of container/ cooler?                          | <u>Yes</u> | No        | 2.6 °C                   |
| #2  | Shipping container in good condition?                      | <u>Yes</u> | No        |                          |
| #3  | Custody Seals intact on shipping container/ cooler?        | <u>Yes</u> | No        | <u>Not Present</u>       |
| #4  | Custody Seals intact on sample bottles/ container? /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> | <u>No</u> | Not Applicable           |
| #20 | VOC samples have zero headspace?                           | <u>Yes</u> | No        | Not Applicable           |

### Variance Documentation

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

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

Corrective Action Taken:

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

**Analytical Report 384537**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14" VAC to Jal Legacy**

**SRS# 2009-92**

**16-AUG-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

**Xenco-Atlanta (EPA Lab Code: GA00046):**

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

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

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

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

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

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

**Xenco-Boca Raton (EPA Lab Code: FL00449):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**  
**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**



16-AUG-10

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

Reference: XENCO Report No: **384537**  
**14" VAC to Jal Legacy**  
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 384537. 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. 384537 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 384537



PLAINS ALL AMERICAN EH&S, Midland, TX

14" VAC to Jal Legacy

| Sample Id     | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|---------------|--------|-----------------|--------------|---------------|
| Screened SP-1 | S      | Aug-04-10 11:00 |              | 384537-001    |
| Screened SP-2 | S      | Aug-04-10 11:10 |              | 384537-002    |



## CASE NARRATIVE

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

**Project Name:** 14" VAC to Jal Legacy



**Project ID:** SRS# 2009-92

**Work Order Number:** 384537

**Report Date:** 16-AUG-10

**Date Received:** 08/05/2010

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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-817871 Percent Moisture

None

**Batch:** LBA-817882 TPH by SW8015 Mod

None

**Batch:** LBA-818918 BTEX by EPA 8021

SW8021BM

Batch 818918, Benzene, Toluene, m,p-Xylenes RPD was outside QC limits.

Samples affected are: 384537-001, -002

SW8021BM

Batch 818918, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 384537-001,384537-002.

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

Samples affected are: 384537-002,384537-001.

SW8021BM

Batch 818918, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 384537-001, -002.

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



# Certificate of Analysis Summary 384537

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" VAC to Jal Legacy



Project Id: SRS# 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Thu Aug-05-10 02:10 pm


Report Date: 16-AUG-10

Project Manager: Brent Barron, II

|                                    |                   |                 |                 |  |  |  |  |
|------------------------------------|-------------------|-----------------|-----------------|--|--|--|--|
| <b>Analysis Requested</b>          | <b>Lab Id:</b>    | 384537-001      | 384537-002      |  |  |  |  |
|                                    | <b>Field Id:</b>  | Screened SP-1   | Screened SP-2   |  |  |  |  |
|                                    | <b>Depth:</b>     |                 |                 |  |  |  |  |
|                                    | <b>Matrix:</b>    | SOIL            | SOIL            |  |  |  |  |
|                                    | <b>Sampled:</b>   | Aug-04-10 11:00 | Aug-04-10 11:10 |  |  |  |  |
| <b>BTEX by EPA 8021</b>            | <b>Extracted:</b> | Aug-13-10 14:30 | Aug-13-10 14:30 |  |  |  |  |
|                                    | <b>Analyzed:</b>  | Aug-16-10 05:32 | Aug-16-10 07:06 |  |  |  |  |
|                                    | <b>Units/RL:</b>  | mg/kg RL        | mg/kg RL        |  |  |  |  |
| Benzene                            |                   | 0.0173 0.0103   | 0.0297 0.0107   |  |  |  |  |
| Toluene                            |                   | 0.1184 0.0205   | 0.1580 0.0215   |  |  |  |  |
| Ethylbenzene                       |                   | 0.3405 0.0103   | 0.3963 0.0107   |  |  |  |  |
| m,p-Xylenes                        |                   | 1.206 0.0205    | 1.354 0.0215    |  |  |  |  |
| o-Xylene                           |                   | 0.7582 0.0103   | 1.784 0.0107    |  |  |  |  |
| Xylenes, Total                     |                   | 1.964 0.0103    | 3.138 0.0107    |  |  |  |  |
| Total BTEX                         |                   | 2.440 0.0103    | 3.722 0.0107    |  |  |  |  |
| <b>Percent Moisture</b>            | <b>Extracted:</b> |                 |                 |  |  |  |  |
|                                    | <b>Analyzed:</b>  | Aug-07-10 09:24 | Aug-07-10 09:24 |  |  |  |  |
|                                    | <b>Units/RL:</b>  | % RL            | % RL            |  |  |  |  |
| Percent Moisture                   |                   | 6.29 1.00       | 6.91 1.00       |  |  |  |  |
| <b>TPH by SW8015 Mod</b>           | <b>Extracted:</b> | Aug-06-10 13:15 | Aug-06-10 13:15 |  |  |  |  |
|                                    | <b>Analyzed:</b>  | Aug-06-10 22:58 | Aug-06-10 23:19 |  |  |  |  |
|                                    | <b>Units/RL:</b>  | mg/kg RL        | mg/kg RL        |  |  |  |  |
| C6-C12 Gasoline Range Hydrocarbons |                   | 1260 80.0       | 1320 80.4       |  |  |  |  |
| C12-C28 Diesel Range Hydrocarbons  |                   | 3550 80.0       | 3400 80.4       |  |  |  |  |
| C28-C35 Oil Range Hydrocarbons     |                   | 201 80.0        | 148 80.4        |  |  |  |  |
| Total TPH                          |                   | 5011 80.0       | 4868 80.4       |  |  |  |  |

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

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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
- MDL** Method Detection Limit
- PQL** Practical Quantitation 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 |
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| 5757 NW 158th St, Miami Lakes, FL 33014     | (305) 823-8500 | (305) 823-8555 |
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| 842 Cantwell Lane, Corpus Christi, TX 78408 | (361) 884-0371 | (361) 884-9116 |





## Form 2 - Surrogate Recoveries

Project Name: 14" VAC to Jal Legacy

Work Orders : 384537,

Lab Batch #: 818918

Sample: 570654-1-BKS / BKS

Batch: 1 Matrix: Solid

Project ID: SRS# 2009-92

Units: mg/kg

Date Analyzed: 08/15/10 22:33

### 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 | 0.0323           | 0.0300          | 108             | 80-120            |       |

Lab Batch #: 818918

Sample: 570654-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/15/10 22:57

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0286           | 0.0300          | 95              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0317           | 0.0300          | 106             | 80-120            |       |

Lab Batch #: 818918

Sample: 570654-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/16/10 00:06

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0244           | 0.0300          | 81              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0286           | 0.0300          | 95              | 80-120            |       |

Lab Batch #: 818918

Sample: 385503-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/16/10 01:17

### SURROGATE RECOVERY STUDY

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

Lab Batch #: 818918

Sample: 385503-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/16/10 01:40

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0275           | 0.0300          | 92              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0292           | 0.0300          | 97              | 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: 14" VAC to Jal Legacy

Work Orders : 384537,

Project ID: SRS# 2009-92

Lab Batch #: 818918

Sample: 384537-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/16/10 05:32

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0190           | 0.0300          | 63              | 80-120            | **    |
| 4-Bromofluorobenzene | 0.0981           | 0.0300          | 327             | 80-120            | **    |

Lab Batch #: 818918

Sample: 384537-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/16/10 07:06

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0171           | 0.0300          | 57              | 80-120            | **    |
| 4-Bromofluorobenzene | 0.0941           | 0.0300          | 314             | 80-120            | **    |

Lab Batch #: 817882

Sample: 570025-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/06/10 21:59

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 120              | 100             | 120             | 70-135            |       |
| o-Terphenyl       | 63.9             | 50.0            | 128             | 70-135            |       |

Lab Batch #: 817882

Sample: 570025-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/06/10 22:19

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 123              | 100             | 123             | 70-135            |       |
| o-Terphenyl       | 57.0             | 50.2            | 114             | 70-135            |       |

Lab Batch #: 817882

Sample: 570025-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/06/10 22:39

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 108              | 100             | 108             | 70-135            |       |
| o-Terphenyl       | 57.2             | 50.1            | 114             | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14" VAC to Jal Legacy

Work Orders : 384537,

Project ID: SRS# 2009-92

Lab Batch #: 817882

Sample: 384537-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/06/10 22:58

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 116                 | 100                | 116                   | 70-135               |       |
| o-Terphenyl                   | 53.0                | 50.0               | 106                   | 70-135               |       |

Lab Batch #: 817882

Sample: 384537-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/06/10 23:19

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 116                 | 99.8               | 116                   | 70-135               |       |
| o-Terphenyl                   | 50.0                | 49.9               | 100                   | 70-135               |       |

Lab Batch #: 817882

Sample: 384564-004 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/07/10 05:53

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 125                 | 100                | 125                   | 70-135               |       |
| o-Terphenyl                   | 47.7                | 50.2               | 95                    | 70-135               |       |

Lab Batch #: 817882

Sample: 384564-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/07/10 06:12

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 124                 | 101                | 123                   | 70-135               |       |
| o-Terphenyl                   | 56.0                | 50.3               | 111                   | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## BS / BSD Recoveries



**Project Name: 14" VAC to Jal Legacy**

**Work Order #: 384537**

**Analyst: ASA**

**Date Prepared: 08/13/2010**

**Project ID: SRS# 2009-92**

**Date Analyzed: 08/15/2010**

**Lab Batch ID: 818918**

**Sample: 570654-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| <b>BTEX by EPA 8021</b> | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|-------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>         |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| Benzene                 | ND                                     | 0.1000                         | 0.1119                                    | 112                                   | 0.1                            | 0.1104  | 110                                     | 1                | 70-130                           | 35                                 |             |
| Toluene                 | ND                                     | 0.1000                         | 0.1042                                    | 104                                   | 0.1                            | 0.1016  | 102                                     | 3                | 70-130                           | 35                                 |             |
| Ethylbenzene            | ND                                     | 0.1000                         | 0.1094                                    | 109                                   | 0.1                            | 0.1059  | 106                                     | 3                | 71-129                           | 35                                 |             |
| m,p-Xylenes             | ND                                     | 0.2000                         | 0.2195                                    | 110                                   | 0.2                            | 0.2111  | 106                                     | 4                | 70-135                           | 35                                 |             |
| o-Xylene                | ND                                     | 0.1000                         | 0.1102                                    | 110                                   | 0.1                            | 0.1075  | 108                                     | 2                | 71-133                           | 35                                 |             |

**Analyst: BEV**

**Date Prepared: 08/06/2010**

**Date Analyzed: 08/06/2010**

**Lab Batch ID: 817882**

**Sample: 570025-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| <b>TPH by SW8015 Mod</b>           | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|------------------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>                    |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| C6-C12 Gasoline Range Hydrocarbons | ND                                     | 1000                           | 1070                                      | 107                                   | 1000                           | 1120  | 112                                     | 5                | 70-135                           | 35                                 |             |
| C12-C28 Diesel Range Hydrocarbons  | ND                                     | 1000                           | 877                                       | 88                                    | 1000                           | 1000  | 100                                     | 13               | 70-135                           | 35                                 |             |

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

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

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

All results are based on MDL and Validated for QC Purposes



# Form 3 - MSD Recoveries



Project Name: 14" VAC to Jal Legacy

Work Order #: 384537

Project ID: SRS# 2009-92

Lab Batch ID: 818918

QC- Sample ID: 385503-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08/16/2010

Date Prepared: 08/13/2010

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
|                              |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
| Benzene                      | ND                                | 0.1088                | 0.0010                         | 1                             | 0.1088                | 0.0688                                   | 63                          | 194      | 70-130                  | 35                        | XF   |
| Toluene                      | ND                                | 0.1088                | 0.0032                         | 3                             | 0.1088                | 0.0566                                   | 52                          | 179      | 70-130                  | 35                        | XF   |
| Ethylbenzene                 | ND                                | 0.1088                | 0.0511                         | 47                            | 0.1088                | 0.0469                                   | 43                          | 9        | 71-129                  | 35                        | X    |
| m,p-Xylenes                  | ND                                | 0.2176                | 0.0024                         | 1                             | 0.2176                | 0.0551                                   | 25                          | 183      | 70-135                  | 35                        | XF   |
| o-Xylene                     | ND                                | 0.1088                | 0.0454                         | 42                            | 0.1088                | 0.0484                                   | 44                          | 6        | 71-133                  | 35                        | X    |

Lab Batch ID: 817882

QC- Sample ID: 384564-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08/07/2010

Date Prepared: 08/06/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes      | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
|                                    |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
| C6-C12 Gasoline Range Hydrocarbons | ND                                | 1050                  | 1130                           | 108                           | 1060                  | 1120                                     | 106                         | 1        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | ND                                | 1050                  | 956                            | 91                            | 1060                  | 1030                                     | 97                          | 7        | 70-135                  | 35                        |      |

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

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

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



## Sample Duplicate Recovery



**Project Name: 14" VAC to Jal Legacy**

**Work Order #: 384537**

**Lab Batch #: 817871**

**Date Analyzed: 08/07/2010**

**QC- Sample ID: 384538-001 D**

**Reporting Units: %**

**Date Prepared: 08/07/2010**

**Batch #: 1**

**Project ID: SRS# 2009-92**

**Analyst: JLG**

**Matrix: Soil**

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 9.30                     | 9.69                        | 4   | 20                  |      |

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

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

BRL - Below Reporting Limit

# 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:** Camille Bryant

**Project Name: 14" Vac to Jal Legacy**

**Company Name**      **Basin Environmental Consulting, LLC**

**Project #: SRS# 2009-92**

**Company Address: P.O. Box 381**

**Project Loc: Lea County, NM**

City/State/Zip: Lovington, NM 88260

**PO #: PAA-J. Henry**

**Telephone No: (575)605-7210**

**Fax No: (505) 396-1429**

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature**

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]

**XENCO Laboratories**

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

**Prelogin / Nonconformance Report - Sample Log-In**

Client: Basin / Plains  
Date/Time: 8/5/10 14:10  
Lab ID #: 384537  
Initials: AS

**Sample Receipt Checklist**

|   |              |              |              |              |
|---|--------------|--------------|--------------|--------------|
| 1. Samples 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 bottles? | Yes          | 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 label(s)?                    | <u>Yes</u>   | No           |              |              |
| 9. Container labels 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 1.1 °C  | lbs °C       | lbs °C       | lbs °C       | lbs °C       |

**Nonconformance Documentation**

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

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

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

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



**Analytical Report 386163**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14" Vac to Jal Legacy**

**SRS# 2009-92**

**30-AUG-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

**Xenco-Houston (EPA Lab code: TX00122):**

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

**Xenco-Atlanta (EPA Lab Code: GA00046):**

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

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

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

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

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

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

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

**Xenco Phoenix (EPA Lab Code: AZ00901):**

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901):** Arizona (AZM757)

**Xenco Tucson (EPA Lab code:AZ000989):** Arizona (AZ0758)



30-AUG-10

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

Reference: XENCO Report No: **386163**  
**14" Vac to Jal Legacy**  
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 386163. 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. 386163 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 386163



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

| Sample Id      | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|----------------|--------|-----------------|--------------|---------------|
| Screened SP #3 | S      | Aug-17-10 10:30 |              | 386163-001    |
| Screened SP #4 | S      | Aug-17-10 10:35 |              | 386163-002    |
| Screened SP #5 | S      | Aug-17-10 10:40 |              | 386163-003    |
| Screened SP #6 | S      | Aug-17-10 10:45 |              | 386163-004    |
| Screened SP #7 | S      | Aug-17-10 10:50 |              | 386163-005    |



## CASE NARRATIVE

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

**Project Name:** 14" Vac to Jal Legacy



**Project ID:** SRS# 2009-92

**Work Order Number:** 386163

**Report Date:** 30-AUG-10

**Date Received:** 08/18/2010

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**Sample receipt non conformances and Comments:**

Client/Consultant authorized the analysis of BTEX on samples 386163-002 through -005 on August 23, 2010

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

None

**Analytical Non Conformances and Comments:**

Batch: LBA-819442 TPH by SW8015 Mod  
SW8015MOD\_NM

Batch 819442, o-Terphenyl recovered above QC limits . Matrix interferences is suspected for this surrogate failure, 1-Chlorooctane was within QC limits; data not confirmed by re-analysis  
Samples affected are: 386163-001.

Batch: LBA-819487 Percent Moisture  
AD2216A

Batch 819487, Percent Moisture RPD is outside the QC limit. This is most likely due to sample non-homogeneity.  
Samples affected are: 386163-004, -002, -001, -003, -005.

Batch: LBA-820715 BTEX by EPA 8021B  
SW8021BM

Batch 820715, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis  
Samples affected are: 386163-003.

4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis  
Samples affected are: 386163-003,386163-004,386163-002,386163-005.



# Certificate of Analysis Summary 386163

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy



Project Id: SRS# 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed Aug-18-10 11:55 am


Report Date: 30-AUG-10

Project Manager: Brent Barron, II

| <i>Analysis Requested</i>          | <i>Lab Id:</i>    | 386163-001      | 386163-002      | 386163-003      | 386163-004      | 386163-005      |  |
|------------------------------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|
|                                    | <i>Field Id:</i>  | Screened SP #3  | Screened SP #4  | Screened SP #5  | Screened SP #6  | Screened SP #7  |  |
|                                    | <i>Depth:</i>     |                 |                 |                 |                 |                 |  |
|                                    | <i>Matrix:</i>    | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            |  |
|                                    | <i>Sampled:</i>   | Aug-17-10 10:30 | Aug-17-10 10:35 | Aug-17-10 10:40 | Aug-17-10 10:45 | Aug-17-10 10:50 |  |
| <b>BTEX by EPA 8021</b>            | <i>Extracted:</i> |                 | Aug-26-10 15:57 | Aug-26-10 15:57 | Aug-26-10 15:57 | Aug-26-10 15:57 |  |
|                                    | <i>Analyzed:</i>  |                 | Aug-27-10 21:41 | Aug-27-10 20:55 | Aug-27-10 22:27 | Aug-27-10 21:18 |  |
|                                    | <i>Units/RL:</i>  |                 | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |  |
| Benzene                            |                   |                 | ND 0.1077       | ND 0.0217       | ND 0.1080       | ND 0.1094       |  |
| Toluene                            |                   |                 | ND 0.2155       | 0.0814 0.0434   | 0.2311 0.2160   | ND 0.2187       |  |
| Ethylbenzene                       |                   |                 | 0.4600 0.1077   | 0.3981 0.0217   | 0.9537 0.1080   | 0.6792 0.1094   |  |
| m,p-Xylenes                        |                   |                 | 1.673 0.2155    | 1.443 0.0434    | 6.488 0.2160    | 4.426 0.2187    |  |
| o-Xylene                           |                   |                 | 1.405 0.1077    | 1.513 0.0217    | 6.944 0.1080    | 4.880 0.1094    |  |
| Xylenes, Total                     |                   |                 | 3.078 0.1077    | 2.956 0.0217    | 13.432 0.1080   | 9.306 0.1094    |  |
| Total BTEX                         |                   |                 | 3.538 0.1077    | 3.436 0.0217    | 14.617 0.1080   | 9.985 0.1094    |  |
| <b>Percent Moisture</b>            | <i>Extracted:</i> |                 |                 |                 |                 |                 |  |
|                                    | <i>Analyzed:</i>  | Aug-19-10 08:29 | Aug-19-10 08:29 | Aug-19-10 08:29 | Aug-19-10 08:29 | Aug-19-10 08:29 |  |
|                                    | <i>Units/RL:</i>  | % RL            | % RL            | % RL            | % RL            | % RL            |  |
| Percent Moisture                   |                   | 5.64 1.00       | 7.36 1.00       | 8.04 1.00       | 7.78 1.00       | 9.29 1.00       |  |
| <b>TPH by SW8015 Mod</b>           | <i>Extracted:</i> | Aug-18-10 11:55 | Aug-18-10 11:55 | Aug-18-10 11:55 | Aug-18-10 11:55 | Aug-18-10 11:55 |  |
|                                    | <i>Analyzed:</i>  | Aug-18-10 15:10 | Aug-18-10 15:30 | Aug-18-10 15:50 | Aug-18-10 16:09 | Aug-18-10 16:49 |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |  |
| C6-C12 Gasoline Range Hydrocarbons |                   | 643 79.1        | 1120 80.6       | 1190 81.2       | 1490 81.1       | 1290 82.5       |  |
| C12-C28 Diesel Range Hydrocarbons  |                   | 5810 79.1       | 2840 80.6       | 2480 81.2       | 2510 81.1       | 2510 82.5       |  |
| C28-C35 Oil Range Hydrocarbons     |                   | 1050 79.1       | 160 80.6        | 190 81.2        | 195 81.1        | 145 82.5        |  |
| Total TPH                          |                   | 7503 79.1       | 4120 80.6       | 3860 81.2       | 4195 81.1       | 3945 82.5       |  |

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

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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| 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: 14" Vac to Jal Legacy

Work Orders : 386163,

Project ID: SRS# 2009-92

Lab Batch #: 820715

Sample: 571869-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 08/27/10 05:55

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0305           | 0.0300          | 102             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0356           | 0.0300          | 119             | 80-120            |       |

Lab Batch #: 820715

Sample: 571869-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 08/27/10 06:18

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0346           | 0.0300          | 115             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0360           | 0.0300          | 120             | 80-120            |       |

Lab Batch #: 820715

Sample: 571869-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 08/27/10 07:05

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0288           | 0.0300          | 96              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0335           | 0.0300          | 112             | 80-120            |       |

Lab Batch #: 820715

Sample: 386163-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/27/10 20:55

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0238           | 0.0300          | 79              | 80-120            | **    |
| 4-Bromofluorobenzene | 0.0961           | 0.0300          | 320             | 80-120            | **    |

Lab Batch #: 820715

Sample: 386163-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/27/10 21:18

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0256           | 0.0300          | 85              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0594           | 0.0300          | 198             | 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: 14" Vac to Jal Legacy

Work Orders : 386163,

Project ID: SRS# 2009-92

Lab Batch #: 820715

Sample: 386163-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/27/10 21:41

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0274           | 0.0300          | 91              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0536           | 0.0300          | 179             | 80-120            | **    |

Lab Batch #: 820715

Sample: 386163-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/27/10 22:27

### 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 | 0.0651           | 0.0300          | 217             | 80-120            | **    |

Lab Batch #: 819442

Sample: 570931-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/18/10 12:11

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 85.6             | 100             | 86              | 70-135            |       |
| o-Terphenyl       | 38.0             | 50.0            | 76              | 70-135            |       |

Lab Batch #: 819442

Sample: 570931-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/18/10 12:31

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 88.2             | 100             | 88              | 70-135            |       |
| o-Terphenyl       | 44.8             | 50.0            | 90              | 70-135            |       |

Lab Batch #: 819442

Sample: 570931-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/18/10 12:50

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 74.7             | 100             | 75              | 70-135            |       |
| o-Terphenyl       | 37.8             | 50.0            | 76              | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 386163,

Project ID: SRS# 2009-92

Lab Batch #: 819442

Sample: 386163-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/18/10 15:10

## SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 87.8                | 99.5               | 88                    | 70-135               |       |
| o-Terphenyl                   | 76.9                | 49.8               | 154                   | 70-135               | *     |

Lab Batch #: 819442

Sample: 386163-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/18/10 15:30

## SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 84.2                | 99.5               | 85                    | 70-135               |       |
| o-Terphenyl                   | 47.0                | 49.8               | 94                    | 70-135               |       |

Lab Batch #: 819442

Sample: 386163-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/18/10 15:50

## SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 84.9                | 99.5               | 85                    | 70-135               |       |
| o-Terphenyl                   | 49.7                | 49.8               | 100                   | 70-135               |       |

Lab Batch #: 819442

Sample: 386163-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/18/10 16:09

## SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 85.8                | 99.7               | 86                    | 70-135               |       |
| o-Terphenyl                   | 45.6                | 49.9               | 91                    | 70-135               |       |

Lab Batch #: 819442

Sample: 386163-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/18/10 16:49

## SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 82.7                | 99.8               | 83                    | 70-135               |       |
| o-Terphenyl                   | 39.2                | 49.9               | 79                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 386163

Analyst: ASA

Date Prepared: 08/26/2010

Project ID: SRS# 2009-92

Date Analyzed: 08/27/2010

Lab Batch ID: 820715

Sample: 571869-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

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

| BTEX by EPA 8021B | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|-------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes          |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| Benzene           | ND                            | 0.1000                | 0.0855                          | 86                          | 0.1                   | 0.0890                                    | 89                            | 4        | 70-125                  | 25                        |      |
| Toluene           | ND                            | 0.1000                | 0.0866                          | 87                          | 0.1                   | 0.0886                                    | 89                            | 2        | 70-125                  | 25                        |      |
| Ethylbenzene      | ND                            | 0.1000                | 0.0904                          | 90                          | 0.1                   | 0.0928                                    | 93                            | 3        | 71-129                  | 25                        |      |
| m,p-Xylenes       | ND                            | 0.2000                | 0.1761                          | 88                          | 0.2                   | 0.1806                                    | 90                            | 3        | 70-131                  | 25                        |      |
| o-Xylene          | ND                            | 0.1000                | 0.0900                          | 90                          | 0.1                   | 0.0921                                    | 92                            | 2        | 71-133                  | 25                        |      |

Analyst: JLG

Date Prepared: 08/18/2010

Date Analyzed: 08/18/2010

Lab Batch ID: 819442

Sample: 570931-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| TPH by SW8015 Mod                  | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes                           |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| C6-C12 Gasoline Range Hydrocarbons | ND                            | 1000                  | 1140                            | 114                         | 1000                  | 995                                       | 100                           | 14       | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | ND                            | 1000                  | 936                             | 94                          | 1000                  | 979                                       | 98                            | 4        | 70-135                  | 35                        |      |

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

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

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

All results are based on MDL and Validated for QC Purposes



## Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 386163

Lab Batch #: 819487

Project ID: SRS# 2009-92

Date Analyzed: 08/19/2010

Date Prepared: 08/19/2010

Analyst: JLG

QC- Sample ID: 386098-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 2.56                     | 3.42                        | 29  | 20                  | F    |

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

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

BRL - Below Reporting Limit

## Environmental Lab of Texas

### 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: Camille Bryant**

**Project Name: 14" Vac to Jal Legacy**

**Company Name**      **Basin Environmental Consulting, LLC**

**Project #: SRS# 2009-92**

**Company Address: P.O. Box 381**

**Project Loc: Lea County, NM**

City/State/Zip: Lovington, NM 88260

PO #: PAA-J. Henry

Telephone No: (575) 605-7210

**Fax No: (505) 396-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature:**

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]

**XENCO Laboratories**

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

**Prelogin / Nonconformance Report - Sample Log-In**Client: PLAADate/Time: 8/18/10Lab ID #: 386163Initials: HS**Sample Receipt Checklist**

|   |              |              |              |              |
|---|--------------|--------------|--------------|--------------|
| 1. Samples 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 bottles? | <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 label(s)?                    | <u>Yes</u>   | No           |              |              |
| 9. Container labels 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)?                                       | <u>Yes</u>   | No           | N/A          |              |
| 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 4 °C  | lbs °C       | lbs °C       | lbs °C       | lbs °C       |

**Nonconformance Documentation**

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

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

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

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

**Analytical Report 387696**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14" Vac to Jal Legacy**

**SRS# 2009-92**

**09-SEP-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

**Xenco-Houston (EPA Lab code: TX00122):**

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

**Xenco-Atlanta (EPA Lab Code: GA00046):**

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (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: FL01273):**

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)

North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

**Xenco Phoenix (EPA Lab Code: AZ00901):**

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901):** Arizona (AZM757)

**Xenco Tucson (EPA Lab code:AZ000989):** Arizona (AZ0758)



09-SEP-10

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

Reference: XENCO Report No: **387696**  
**14" Vac to Jal Legacy**  
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 387696. 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. 387696 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 387696



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

| Sample Id        | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|------------------|--------|-----------------|--------------|---------------|
| Screened SP # 8  | S      | Aug-30-10 10:30 |              | 387696-001    |
| Screened SP # 9  | S      | Aug-30-10 10:35 |              | 387696-002    |
| Screened SP # 10 | S      | Aug-30-10 10:40 |              | 387696-003    |





## CASE NARRATIVE

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

**Project Name:** 14" Vac to Jal Legacy



**Project ID:** SRS# 2009-92

**Work Order Number:** 387696

**Report Date:** 09-SEP-10

**Date Received:** 08/30/2010

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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-820965 Percent Moisture

None

**Batch:** LBA-820995 TPH by SW8015 Mod

None

**Batch:** LBA-822248 BTEX by EPA 8021

SW8021BM

Batch 822248, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 387696-001,387696-003,387696-002.

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

Samples affected are: 387696-001,387696-003,387696-002.

SW8021BM

Batch 822248, Benzene, Toluene, o-Xylene recovered below QC limits in the Matrix Spike.

Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered above QC limits in the Matrix Spike Duplicate.

Samples affected are: 387696-001, -003, -002.

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

SW8021BM

Batch 822248, Benzene, Ethylbenzene, Toluene, m,p-Xylenes , o-Xylene RPD was outside QC limits.

Samples affected are: 387696-001, -003, -002



# Certificate of Analysis Summary 387696

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy



Project Id: SRS# 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Mon Aug-30-10 01:20 pm


Report Date: 09-SEP-10

Project Manager: Brent Barron, II

| <i>Analysis Requested</i>          | <i>Lab Id:</i>    | 387696-001      | 387696-002      | 387696-003       |  |  |  |
|------------------------------------|-------------------|-----------------|-----------------|------------------|--|--|--|
|                                    | <i>Field Id:</i>  | Screened SP # 8 | Screened SP # 9 | Screened SP # 10 |  |  |  |
|                                    | <i>Depth:</i>     |                 |                 |                  |  |  |  |
|                                    | <i>Matrix:</i>    | SOIL            | SOIL            | SOIL             |  |  |  |
|                                    | <i>Sampled:</i>   | Aug-30-10 10:30 | Aug-30-10 10:35 | Aug-30-10 10:40  |  |  |  |
| <b>BTEX by EPA 8021</b>            | <i>Extracted:</i> | Sep-09-10 08:00 | Sep-09-10 08:00 | Sep-09-10 08:00  |  |  |  |
|                                    | <i>Analyzed:</i>  | Sep-09-10 12:32 | Sep-09-10 12:55 | Sep-09-10 13:18  |  |  |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL         |  |  |  |
| Benzene                            |                   | ND 0.1105       | ND 0.1130       | ND 0.1104        |  |  |  |
| Toluene                            |                   | 0.2828 0.2210   | 0.4158 0.2260   | 0.5621 0.2208    |  |  |  |
| Ethylbenzene                       |                   | 1.507 0.1105    | 1.037 0.1130    | 1.339 0.1104     |  |  |  |
| m,p-Xylenes                        |                   | 6.676 0.2210    | 11.78 0.2260    | 15.25 0.2208     |  |  |  |
| o-Xylene                           |                   | 7.176 0.1105    | 8.956 0.1130    | 10.40 0.1104     |  |  |  |
| Xylenes, Total                     |                   | 13.852 0.1105   | 20.74 0.1130    | 25.65 0.1104     |  |  |  |
| Total BTEX                         |                   | 15.642 0.1105   | 22.19 0.1130    | 27.55 0.1104     |  |  |  |
| <b>Percent Moisture</b>            | <i>Extracted:</i> |                 |                 |                  |  |  |  |
|                                    | <i>Analyzed:</i>  | Aug-31-10 08:22 | Aug-31-10 08:22 | Aug-31-10 08:22  |  |  |  |
|                                    | <i>Units/RL:</i>  | % RL            | % RL            | % RL             |  |  |  |
| Percent Moisture                   |                   | 9.31 1.00       | 10.6 1.00       | 9.44 1.00        |  |  |  |
| <b>TPH by SW8015 Mod</b>           | <i>Extracted:</i> | Aug-30-10 15:40 | Aug-30-10 15:40 | Aug-30-10 15:40  |  |  |  |
|                                    | <i>Analyzed:</i>  | Aug-31-10 02:49 | Aug-31-10 03:28 | Aug-31-10 03:47  |  |  |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL         |  |  |  |
| C6-C12 Gasoline Range Hydrocarbons |                   | 981 16.5        | 1690 16.8       | 1420 16.6        |  |  |  |
| C12-C28 Diesel Range Hydrocarbons  |                   | 1730 16.5       | 2520 16.8       | 2210 16.6        |  |  |  |
| C28-C35 Oil Range Hydrocarbons     |                   | 80.4 16.5       | 129 16.8        | 73.7 16.6        |  |  |  |
| Total TPH                          |                   | 2791 16.5       | 4339 16.8       | 3704 16.6        |  |  |  |

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - 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

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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*Certified and approved by numerous States and Agencies.*

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| 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: 14" Vac to Jal Legacy

Work Orders : 387696,

Project ID: SRS# 2009-92

Lab Batch #: 822248

Sample: 572851-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/09/10 10:35

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0338           | 0.0300          | 113             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0344           | 0.0300          | 115             | 80-120            |       |

Lab Batch #: 822248

Sample: 572851-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/09/10 11:45

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0289           | 0.0300          | 96              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0341           | 0.0300          | 114             | 80-120            |       |

Lab Batch #: 822248

Sample: 387696-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/09/10 12:32

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0237           | 0.0300          | 79              | 80-120            | **    |
| 4-Bromofluorobenzene | 0.0540           | 0.0300          | 180             | 80-120            | **    |

Lab Batch #: 822248

Sample: 387696-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/09/10 12:55

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0203           | 0.0300          | 68              | 80-120            | **    |
| 4-Bromofluorobenzene | 0.0480           | 0.0300          | 160             | 80-120            | **    |

Lab Batch #: 822248

Sample: 387696-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/09/10 13:18

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0231           | 0.0300          | 77              | 80-120            | **    |
| 4-Bromofluorobenzene | 0.0558           | 0.0300          | 186             | 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: 14" Vac to Jal Legacy

Work Orders : 387696,

Project ID: SRS# 2009-92

Lab Batch #: 822248

Sample: 387639-009 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/09/10 14:51

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0328           | 0.0300          | 109             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0352           | 0.0300          | 117             | 80-120            |       |

Lab Batch #: 822248

Sample: 387639-009 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/09/10 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  | 0.0324           | 0.0300          | 108             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0324           | 0.0300          | 108             | 80-120            |       |

Lab Batch #: 820995

Sample: 572063-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/30/10 22:54

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 84.5             | 99.9            | 85              | 70-135            |       |
| o-Terphenyl       | 47.6             | 50.0            | 95              | 70-135            |       |

Lab Batch #: 820995

Sample: 572063-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/30/10 23:13

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 84.9             | 100             | 85              | 70-135            |       |
| o-Terphenyl       | 45.5             | 50.0            | 91              | 70-135            |       |

Lab Batch #: 820995

Sample: 572063-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/30/10 23:34

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 86.3             | 99.9            | 86              | 70-135            |       |
| o-Terphenyl       | 44.5             | 50.0            | 89              | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 387696,

Lab Batch #: 820995

Sample: 387696-001 / SMP

Project ID: SRS# 2009-92

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/31/10 02:49

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 95.2                | 99.5               | 96                    | 70-135               |       |
| o-Terphenyl                   | 43.4                | 49.8               | 87                    | 70-135               |       |

Lab Batch #: 820995

Sample: 387696-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/31/10 03:28

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 101                 | 100                | 101                   | 70-135               |       |
| o-Terphenyl                   | 42.6                | 50.1               | 85                    | 70-135               |       |

Lab Batch #: 820995

Sample: 387696-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/31/10 03:47

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 97.4                | 100                | 97                    | 70-135               |       |
| o-Terphenyl                   | 43.7                | 50.1               | 87                    | 70-135               |       |

Lab Batch #: 820995

Sample: 387639-001 S / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/31/10 04:07

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 87.6                | 100                | 88                    | 70-135               |       |
| o-Terphenyl                   | 42.3                | 50.1               | 84                    | 70-135               |       |

Lab Batch #: 820995

Sample: 387639-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/31/10 04:26

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 85.1                | 100                | 85                    | 70-135               |       |
| o-Terphenyl                   | 41.6                | 50.2               | 83                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

^ If results are based on MDL and validated for QC purposes.



## Blank Spike Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 387696

Project ID:

SRS# 2009-92

Lab Batch #: 822248

Sample: 572851-1-BKS

Matrix: Solid

Date Analyzed: 09/09/2010

Date Prepared: 09/09/2010

Analyst: ASA

Reporting Units: mg/kg

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Blank<br>Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|------------------------------|------------------------|-----------------------|---------------------------------|-----------------------------|-------------------------|-------|
| Benzene                      | ND                     | 0.1000                | 0.0821                          | 82                          | 70-130                  |       |
| Toluene                      | ND                     | 0.1000                | 0.0819                          | 82                          | 70-130                  |       |
| Ethylbenzene                 | ND                     | 0.1000                | 0.0864                          | 86                          | 71-129                  |       |
| m,p-Xylenes                  | ND                     | 0.2000                | 0.1691                          | 85                          | 70-135                  |       |
| o-Xylene                     | ND                     | 0.1000                | 0.0856                          | 86                          | 71-133                  |       |

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

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

BRL - Below Reporting Limit



## BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 387696

Analyst: BEV

Date Prepared: 08/30/2010

Project ID: SRS# 2009-92

Date Analyzed: 08/30/2010

Lab Batch ID: 820995

Sample: 572063-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| TPH by SW8015 Mod                  | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes                           |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| C6-C12 Gasoline Range Hydrocarbons | ND                            | 999                   | 1040                            | 104                         | 1000                  | 1060                                      | 106                           | 2        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | ND                            | 999                   | 1010                            | 101                         | 1000                  | 1010                                      | 101                           | 0        | 70-135                  | 35                        |      |

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

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

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

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS / MSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 387696

Project ID: SRS# 2009-92

Lab Batch ID: 822248

QC- Sample ID: 387639-009 S

Batch #: 1 Matrix: Soil

Date Analyzed: 09/09/2010

Date Prepared: 09/09/2010

Analyst: ASA

Reporting Units: mg/kg

| MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY |                          |                 |                          |                      |                 |                                    |                    |       |                   |                     |      |
|--|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| BTEX by EPA 8021<br>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  | 0.0028                   | 0.1206          | 0.0826                   | 66                   | 0.1218          | 0.1654                             | 133                | 67    | 70-130            | 35                  | XF   |
| Toluene  | ND                       | 0.1206          | 0.0812                   | 67                   | 0.1218          | 0.1842                             | 151                | 78    | 70-130            | 35                  | XF   |
| Ethylbenzene   | ND                       | 0.1206          | 0.0863                   | 72                   | 0.1218          | 0.2314                             | 190                | 91    | 71-129            | 35                  | XF   |
| m,p-Xylenes  | ND                       | 0.2412          | 0.1705                   | 71                   | 0.2436          | 0.4920                             | 202                | 97    | 70-135            | 35                  | XF   |
| o-Xylene   | ND                       | 0.1206          | 0.0839                   | 70                   | 0.1218          | 0.2243                             | 184                | 91    | 71-133            | 35                  | XF   |

Lab Batch ID: 820995

QC- Sample ID: 387639-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08/31/2010

Date Prepared: 08/30/2010

Analyst: BEV

Reporting Units: mg/kg

| MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY |                          |                 |                          |                      |                 |                                    |                    |       |                   |                     |      |
|--|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| TPH by SW8015 Mod<br>Analytes                        | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
| C6-C12 Gasoline Range Hydrocarbons                   | ND                       | 1130            | 1200                     | 106                  | 1130            | 1170                               | 104                | 3     | 70-135            | 35                  |      |
| C12-C28 Diesel Range Hydrocarbons                    | ND                       | 1130            | 1090                     | 96                   | 1130            | 1020                               | 90                 | 7     | 70-135            | 35                  |      |

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

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

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



## Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 387696

Lab Batch #: 820965

Project ID: SRS# 2009-92

Date Analyzed: 08/31/2010

Date Prepared: 08/31/2010

Analyst: JLG

QC- Sample ID: 387639-009 D

Batch #: 1

Matrix: Soil

Reporting Units: %

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 17.9                     | 16.1                        | 10  | 20                  |      |

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

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

BRL - Below Reporting Limit

## Environmental Lab of Texas

### 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:** Camille Bryant

**Project Name: 14" Vac to Jal Legacy**

**Company Name** Basin Environmental Consulting, LLC

Project #: SRS# 2009-92

**Company Address:** P.O. Box 381

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

**PO #: PAA-J. Henry**

Telephone No: **(575)605-7210**

**Fax No: (505) 396-1429**

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature:** \_\_\_\_\_

**e-mail: [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)**

[illegible]

**XENCO Laboratories**

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

**Prelogin / Nonconformance Report - Sample Log-In**Client: PLACDate/Time: 8/30/10 13:20Lab ID #: 387696Initials: JS**Sample Receipt Checklist**

|   |              |              |              |              |
|---|--------------|--------------|--------------|--------------|
| 1. Samples 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 bottles? | <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 label(s)?                    | <u>Yes</u>   | No           |              |              |
| 9. Container labels 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)?                                       | <u>Yes</u>   | <u>No</u>    | N/A          |              |
| 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>5.0</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

**Analytical Report 388944**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14" Vac to Jal Legacy**

**SRS# 2009-92**

**16-SEP-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

**Xenco-Houston (EPA Lab code: TX00122):**

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

**Xenco-Atlanta (EPA Lab Code: GA00046):**

**Florida (E87429), North Carolina (483), South Carolina (98015), Utah (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: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**  
**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)**

**Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)**



16-SEP-10

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

Reference: XENCO Report No: **388944**  
**14" Vac to Jal Legacy**  
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 388944. 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. 388944 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 388944



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

| Sample Id      | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|----------------|--------|-----------------|--------------|---------------|
| Screened SP-3A | S      | Sep-07-10 12:00 |              | 388944-001    |
| Screened SP-11 | S      | Sep-07-10 12:15 |              | 388944-002    |
| Screened SP-12 | S      | Sep-07-10 12:30 |              | 388944-003    |
| Screened SP-13 | S      | Sep-07-10 12:45 |              | 388944-004    |



## CASE NARRATIVE

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

**Project Name:** 14" Vac to Jal Legacy



**Project ID:** SRS# 2009-92

**Work Order Number:** 388944

**Report Date:** 16-SEP-10

**Date Received:** 09/08/2010

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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-822164 Percent Moisture

None

**Batch:** LBA-822362 TPH by SW8015 Mod

None

**Batch:** LBA-823241 BTEX by EPA 8021

SW8021BM

Batch 823241, Ethylbenzene, o-Xylene RPD is outside the QC limit. This is most likely due to sample non-homogeneity.

Samples affected are: 388944-004, -002, -001, -003.

SW8021BM

Batch 823241, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 388944-001 D, 388944-003, 388944-002, 388944-001. 1,4-Difluorobenzene was within QC limits.





# Certificate of Analysis Summary 388944

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy



Project Id: SRS# 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed Sep-08-10 01:30 pm


Report Date: 16-SEP-10

Project Manager: Brent Barron, II

| <i>Analysis Requested</i>          | <i>Lab Id:</i>    | 388944-001      | 388944-002      | 388944-003      | 388944-004      |  |  |
|------------------------------------|-------------------|-----------------|-----------------|-----------------|-----------------|--|--|
|                                    | <i>Field Id:</i>  | Screened SP-3A  | Screened SP-11  | Screened SP-12  | Screened SP-13  |  |  |
|                                    | <i>Depth:</i>     |                 |                 |                 |                 |  |  |
|                                    | <i>Matrix:</i>    | SOIL            | SOIL            | SOIL            | SOIL            |  |  |
|                                    | <i>Sampled:</i>   | Sep-07-10 12:00 | Sep-07-10 12:15 | Sep-07-10 12:30 | Sep-07-10 12:45 |  |  |
| <b>BTEX by EPA 8021</b>            | <i>Extracted:</i> | Sep-14-10 11:00 | Sep-14-10 11:00 | Sep-14-10 11:00 | Sep-14-10 11:00 |  |  |
|                                    | <i>Analyzed:</i>  | Sep-15-10 13:47 | Sep-15-10 14:29 | Sep-15-10 16:07 | Sep-15-10 16:29 |  |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |  |  |
| Benzene                            |                   | ND 0.0213       | ND 0.0535       | ND 0.0528       | ND 0.0541       |  |  |
| Toluene                            |                   | 0.0552 0.0426   | 0.2656 0.1071   | ND 0.1056       | 0.2092 0.1081   |  |  |
| Ethylbenzene                       |                   | 0.1002 0.0213   | 0.3266 0.0535   | 0.3476 0.0528   | 0.1270 0.0541   |  |  |
| m,p-Xylenes                        |                   | 0.2966 0.0426   | 0.4519 0.1071   | 1.258 0.1056    | 3.177 0.1081    |  |  |
| o-Xylene                           |                   | 0.1321 0.0213   | 0.2816 0.0535   | 1.855 0.0528    | 1.938 0.0541    |  |  |
| a,a,a-Trifluorotoluene             |                   | 0.639           | 1.61            | 1.58            | 1.62            |  |  |
| Xylenes, Total                     |                   | 0.4287 0.0213   | 0.7335 0.0535   | 3.113 0.0528    | 5.115 0.0541    |  |  |
| Total BTEX                         |                   | 0.5841 0.0213   | 1.3257 0.0535   | 3.461 0.0528    | 5.451 0.0541    |  |  |
| <b>Percent Moisture</b>            | <i>Extracted:</i> |                 |                 |                 |                 |  |  |
|                                    | <i>Analyzed:</i>  | Sep-09-10 09:17 | Sep-09-10 09:17 | Sep-09-10 09:17 | Sep-09-10 09:17 |  |  |
|                                    | <i>Units/RL:</i>  | % RL            | % RL            | % RL            | % RL            |  |  |
| Percent Moisture                   |                   | 6.15 1.00       | 6.61 1.00       | 5.34 1.00       | 7.51 1.00       |  |  |
| <b>TPH by SW8015 Mod</b>           | <i>Extracted:</i> | Sep-09-10 09:15 | Sep-09-10 09:15 | Sep-09-10 09:15 | Sep-09-10 09:15 |  |  |
|                                    | <i>Analyzed:</i>  | Sep-09-10 15:16 | Sep-09-10 15:57 | Sep-09-10 16:17 | Sep-09-10 16:37 |  |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL        | mg/kg RL        |  |  |
| C6-C12 Gasoline Range Hydrocarbons |                   | 680 79.5        | 592 16.0        | 764 79.4        | 1270 81.3       |  |  |
| C12-C28 Diesel Range Hydrocarbons  |                   | 2470 79.5       | 2060 16.0       | 2750 79.4       | 2710 81.3       |  |  |
| C28-C35 Oil Range Hydrocarbons     |                   | 199 79.5        | 134 16.0        | 140 79.4        | 173 81.3        |  |  |
| Total TPH                          |                   | 3349 79.5       | 2786 16.0       | 3654 79.4       | 4153 81.3       |  |  |

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

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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

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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| 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: 14" Vac to Jal Legacy

Work Orders : 388944,

Lab Batch #: 823241

Sample: 573410-1-BKS / BKS

Batch: 1 Matrix: Solid

Project ID: SRS# 2009-92

Units: mg/kg

Date Analyzed: 09/15/10 12:00

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0329           | 0.0300          | 110             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0277           | 0.0300          | 92              | 80-120            |       |

Lab Batch #: 823241

Sample: 573410-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/15/10 12:22

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0334           | 0.0300          | 111             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0297           | 0.0300          | 99              | 80-120            |       |

Lab Batch #: 823241

Sample: 573410-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/15/10 13:25

### SURROGATE RECOVERY STUDY

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

Lab Batch #: 823241

Sample: 388944-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/15/10 13:47

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0323           | 0.0300          | 108             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0407           | 0.0300          | 136             | 80-120            | **    |

Lab Batch #: 823241

Sample: 388944-001 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/15/10 14:08

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0268           | 0.0300          | 89              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0402           | 0.0300          | 134             | 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: 14" Vac to Jal Legacy

Work Orders : 388944,

Project ID: SRS# 2009-92

Lab Batch #: 823241

Sample: 388944-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/15/10 14:29

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0268           | 0.0300          | 89              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0365           | 0.0300          | 122             | 80-120            | **    |

Lab Batch #: 823241

Sample: 388944-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/15/10 16:07

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0323           | 0.0300          | 108             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0426           | 0.0300          | 142             | 80-120            | **    |

Lab Batch #: 823241

Sample: 388944-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/15/10 16:29

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0269           | 0.0300          | 90              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0352           | 0.0300          | 117             | 80-120            |       |

Lab Batch #: 822362

Sample: 572914-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/09/10 11:09

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 120              | 101             | 119             | 70-135            |       |
| o-Terphenyl       | 61.3             | 50.3            | 122             | 70-135            |       |

Lab Batch #: 822362

Sample: 572914-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/09/10 11:28

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 115              | 99.7            | 115             | 70-135            |       |
| o-Terphenyl       | 53.5             | 49.9            | 107             | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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

## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 388944,

Project ID: SRS# 2009-92

Lab Batch #: 822362

Sample: 572914-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/09/10 11:49

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 102                 | 100                | 102                   | 70-135               |       |
| o-Terphenyl                   | 53.5                | 50.2               | 107                   | 70-135               |       |

Lab Batch #: 822362

Sample: 388944-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/09/10 15:16

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 102                 | 99.5               | 103                   | 70-135               |       |
| o-Terphenyl                   | 44.2                | 49.8               | 89                    | 70-135               |       |

Lab Batch #: 822362

Sample: 388944-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/09/10 15:57

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 120                 | 99.7               | 120                   | 70-135               |       |
| o-Terphenyl                   | 35.5                | 49.9               | 71                    | 70-135               |       |

Lab Batch #: 822362

Sample: 388944-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/09/10 16:17

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 108                 | 100                | 108                   | 70-135               |       |
| o-Terphenyl                   | 51.4                | 50.1               | 103                   | 70-135               |       |

Lab Batch #: 822362

Sample: 388944-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/09/10 16:37

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 108                 | 100                | 108                   | 70-135               |       |
| o-Terphenyl                   | 38.0                | 50.1               | 76                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 388944,

Project ID: SRS# 2009-92

Lab Batch #: 822362

Sample: 388842-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/09/10 19:17

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 118                 | 99.8               | 118                   | 70-135               |       |
| o-Terphenyl                   | 63.6                | 49.9               | 127                   | 70-135               |       |

Lab Batch #: 822362

Sample: 388842-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/09/10 19:37

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 115                 | 101                | 114                   | 70-135               |       |
| o-Terphenyl                   | 54.0                | 50.3               | 107                   | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 388944

Analyst: SEE

Date Prepared: 09/14/2010

Project ID: SRS# 2009-92

Date Analyzed: 09/15/2010

Lab Batch ID: 823241

Sample: 573410-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| BTEX by EPA 8021 | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes         |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| Benzene          | ND                            | 0.0994                | 0.0955                          | 96                          | 0.0998                | 0.1003                                    | 101                           | 5        | 70-130                  | 35                        |      |
| Toluene          | ND                            | 0.0994                | 0.0929                          | 93                          | 0.0998                | 0.0970                                    | 97                            | 4        | 70-130                  | 35                        |      |
| Ethylbenzene     | ND                            | 0.0994                | 0.1011                          | 102                         | 0.0998                | 0.1051                                    | 105                           | 4        | 71-129                  | 35                        |      |
| m,p-Xylenes      | ND                            | 0.1988                | 0.2018                          | 102                         | 0.1996                | 0.2110                                    | 106                           | 4        | 70-135                  | 35                        |      |
| o-Xylene         | ND                            | 0.0994                | 0.0911                          | 92                          | 0.0998                | 0.0963                                    | 96                            | 6        | 71-133                  | 35                        |      |

Analyst: BEV

Date Prepared: 09/09/2010

Date Analyzed: 09/09/2010

Lab Batch ID: 822362

Sample: 572914-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| TPH by SW8015 Mod                  | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes                           |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| C6-C12 Gasoline Range Hydrocarbons | ND                            | 1010                  | 994                             | 98                          | 997                   | 983                                       | 99                            | 1        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | ND                            | 1010                  | 834                             | 83                          | 997                   | 834                                       | 84                            | 0        | 70-135                  | 35                        |      |

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS / MSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 388944

Project ID: SRS# 2009-92

Lab Batch ID: 822362

QC- Sample ID: 388842-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 09/09/2010

Date Prepared: 09/09/2010

Analyst: BEV

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes      | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| C6-C12 Gasoline Range Hydrocarbons | ND                                | 1270                  | 1230                           | 97                            | 1280                  | 1220                                     | 95                          | 1        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | ND                                | 1270                  | 1100                           | 87                            | 1280                  | 1050                                     | 82                          | 5        | 70-135                  | 35                        |      |

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

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

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





## Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 388944

Lab Batch #: 823241

Date Analyzed: 09/15/2010

QC- Sample ID: 388944-001 D

Reporting Units: mg/kg

Date Prepared: 09/14/2010

Batch #: 1

Project ID: SRS# 2009-92

Analyst: SEE

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| BTEX by EPA 8021                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Benzene                            | ND                       | ND                          | NC  | 35                  |      |
| Toluene                            | 0.0552                   | 0.0654                      | 17  | 35                  |      |
| Ethylbenzene                       | 0.1002                   | 0.2067                      | 69  | 35                  | F    |
| m,p-Xylenes                        | 0.2966                   | 0.3303                      | 11  | 35                  |      |
| o-Xylene                           | 0.1321                   | 0.2255                      | 52  | 35                  | F    |
| a,a,a-Trifluorotoluene             | 0.639                    | 0.639                       | 0   | 35                  |      |

Lab Batch #: 822164

Date Analyzed: 09/09/2010

QC- Sample ID: 388842-001 D

Reporting Units: %

Date Prepared: 09/09/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 21.2                     | 20.7                        | 2   | 20                  |      |

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

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

BRL - Below Reporting Limit

# Environmental Lab of Texas

## 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: Camille Bryant

Project Name: 14" Vac to Jal Legacy

Company Name: Basin Environmental Consulting, LLC

Project #: SRS# 2009-92

Company Address: P.O. Box 381

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA-J. Henry

Telephone No: (505) 605-7210

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Camille Bryant

e-mail: cibryant@basin-consulting.com

(lab use only)

ORDER #:

388944

| LAB # (lab use only) | FIELD CODE | Beginning Depth | Ending Depth | Date Sampled | Time Sampled | Field Filtered | Total #. of Containers | 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<br>CW - Groundwater S - Soil/Sol<br>NP - Non-potable - specify conc | TPH: 418.1 (8015M) 8010 | TPH: TX 1005 TX 1006 | Cations (Ca, Mg, Na, K) | Anions (Cl, SO <sub>4</sub> , Alkalinity) | SAR / ESP / CEC | Metals: As Ag Ba Cd Cr Pb Hg S | Volatiles | Semivolatiles | BTEX 8021B/5030 or BTEX 8260 | RCI | N.O.R.M. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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VOCs Free of Headspace? Y N  
Custody seals on container(s) Y N  
Sample Hand Delivered by Y N  
by Counter? Y N  
by UPS Y N  
by DHL Y N  
by FedEx Y N  
by Lone Star Y N  
Temperature Upon Receipt: 5.1 °C

**XENCO Laboratories**

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

**Prelogin / Nonconformance Report - Sample Log-In**

Client: Basin Frw.  
Date/Time: 9/8/10 1:30  
Lab ID #: 388944  
Initials: TD

**Sample Receipt Checklist**

|   |              |              |              |                        |
|---|--------------|--------------|--------------|------------------------|
| 1. Samples 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 bottles? | <u>Yes</u>   | No           | N/A          | <u>Labels as seals</u> |
| 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 label(s)?                    | <u>Yes</u>   | No           |              |                        |
| 9. Container labels 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          | <u>No</u>    | N/A          |                        |
| 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>51</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

**Analytical Report 389406**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Camille Bryant**

**14 " Vac to Jal Legacy**

**SRS# 2009-92**

**17-SEP-10**



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

**Xenco-Atlanta (EPA Lab Code: GA00046):**

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

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

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

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

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

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

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**  
**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)**

**Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)**



17-SEP-10

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

Reference: XENCO Report No: **389406**  
**14 " Vac to Jal Legacy**  
Project Address: Lea County, NM

**Camille 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 389406. 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. 389406 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 389406



PLAINS ALL AMERICAN EH&S, Midland, TX

14 " Vac to Jal Legacy

| Sample Id        | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|------------------|--------|-----------------|--------------|---------------|
| Screened SP # 14 | S      | Sep-10-10 13:30 |              | 389406-001    |
| Screened SP # 15 | S      | Sep-10-10 13:40 |              | 389406-002    |
| Screened SP # 16 | S      | Sep-10-10 13:50 |              | 389406-003    |



## CASE NARRATIVE

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

**Project Name:** 14 " Vac to Jal Legacy



**Project ID:** SRS# 2009-92

**Work Order Number:** 389406

**Report Date:** 17-SEP-10

**Date Received:** 09/10/2010

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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-822471 Percent Moisture

None

Batch: LBA-822482 TPH by SW8015 Mod

None

Batch: LBA-823318 BTEX by EPA 8021

SW8021BM

Batch 823318, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 389406-002.

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

Samples affected are: 389406-003.

SW8021BM

Batch 823318, Benzene, Toluene recovered below QC limits in the Matrix Spike.

Samples affected are: 389406-003, -002.

The Laboratory Control Sample for Toluene, Benzene is within laboratory Control Limits

Batch: LBA-823461 BTEX by EPA 8021

SW8021BM

Batch 823461, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 389406-001.

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

Samples affected are: 389406-001.



# Certificate of Analysis Summary 389406

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



Project Id: SRS# 2009-92

Contact: Camille Bryant

Project Location: Lea County, NM

Project Name: 14 " Vac to Jal Legacy

Date Received in Lab: Fri Sep-10-10 02:05 pm


Report Date: 17-SEP-10

Project Manager: Brent Barron, II

| <i>Analysis Requested</i>          | <i>Lab Id:</i>    | 389406-001       | 389406-002       | 389406-003       |  |  |  |
|------------------------------------|-------------------|------------------|------------------|------------------|--|--|--|
|                                    | <i>Field Id:</i>  | Screened SP # 14 | Screened SP # 15 | Screened SP # 16 |  |  |  |
|                                    | <i>Depth:</i>     |                  |                  |                  |  |  |  |
|                                    | <i>Matrix:</i>    | SOIL             | SOIL             | SOIL             |  |  |  |
|                                    | <i>Sampled:</i>   | Sep-10-10 13:30  | Sep-10-10 13:40  | Sep-10-10 13:50  |  |  |  |
| <b>BTEX by EPA 8021</b>            | <i>Extracted:</i> | Sep-15-10 09:00  | Sep-14-10 10:30  | Sep-14-10 10:30  |  |  |  |
|                                    | <i>Analyzed:</i>  | Sep-16-10 04:09  | Sep-15-10 13:44  | Sep-15-10 13:20  |  |  |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL         | mg/kg RL         | mg/kg RL         |  |  |  |
| Benzene                            |                   | 0.0011 0.0011    | ND 0.0265        | ND 0.0265        |  |  |  |
| Toluene                            |                   | 0.0314 0.0021    | 0.1400 0.0530    | 0.0672 0.0529    |  |  |  |
| Ethylbenzene                       |                   | 0.0149 0.0011    | 0.7463 0.0265    | 0.4311 0.0265    |  |  |  |
| m,p-Xylenes                        |                   | 0.5307 0.0021    | 2.849 0.0530     | 1.377 0.0529     |  |  |  |
| o-Xylene                           |                   | 0.4611 0.0011    | 2.675 0.0265     | 1.203 0.0265     |  |  |  |
| Xylenes, Total                     |                   | 0.9918 0.0011    | 5.524 0.0265     | 2.580 0.0265     |  |  |  |
| Total BTEX                         |                   | 1.0392 0.0011    | 6.410 0.0265     | 3.078 0.0265     |  |  |  |
| <b>Percent Moisture</b>            | <i>Extracted:</i> | Sep-11-10 09:22  | Sep-11-10 09:22  | Sep-11-10 09:22  |  |  |  |
|                                    | <i>Analyzed:</i>  |                  |                  |                  |  |  |  |
|                                    | <i>Units/RL:</i>  | % RL             | % RL             | % RL             |  |  |  |
| Percent Moisture                   |                   | 5.25 1.00        | 5.74 1.00        | 5.47 1.00        |  |  |  |
| <b>TPH by SW8015 Mod</b>           | <i>Extracted:</i> | Sep-10-10 15:30  | Sep-10-10 15:30  | Sep-10-10 15:30  |  |  |  |
|                                    | <i>Analyzed:</i>  | Sep-11-10 03:50  | Sep-11-10 04:10  | Sep-11-10 04:49  |  |  |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL         | mg/kg RL         | mg/kg RL         |  |  |  |
| C6-C12 Gasoline Range Hydrocarbons |                   | 901 15.9         | 645 15.8         | 408 15.8         |  |  |  |
| C12-C28 Diesel Range Hydrocarbons  |                   | 2540 15.9        | 1930 15.8        | 1510 15.8        |  |  |  |
| C28-C35 Oil Range Hydrocarbons     |                   | 66.4 15.9        | 81.6 15.8        | 36.8 15.8        |  |  |  |
| Total TPH                          |                   | 3507 15.9        | 2657 15.8        | 1955 15.8        |  |  |  |

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

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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# Form 2 - Surrogate Recoveries

Project Name: 14 " Vac to Jal Legacy

Work Orders : 389406,

Project ID:SRS# 2009-92

Lab Batch #:823318

Sample: 573462-1-BKS / BKS

Batch: 1 Matrix:Solid

Units: mg/kg

Date Analyzed: 09/15/10 03:44

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0340           | 0.0300          | 113             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0349           | 0.0300          | 116             | 80-120            |       |

Lab Batch #:823318

Sample: 573462-1-BSD / BSD

Batch: 1 Matrix:Solid

Units: mg/kg

Date Analyzed: 09/15/10 04:08

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0343           | 0.0300          | 114             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0344           | 0.0300          | 115             | 80-120            |       |

Lab Batch #:823318

Sample: 573462-1-BLK / BLK

Batch: 1 Matrix:Solid

Units: mg/kg

Date Analyzed: 09/15/10 05:17

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0297           | 0.0300          | 99              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0322           | 0.0300          | 107             | 80-120            |       |

Lab Batch #:823318

Sample: 389624-001 S / MS

Batch: 1 Matrix:Soil

Units: mg/kg

Date Analyzed: 09/15/10 06:04

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0343           | 0.0300          | 114             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0355           | 0.0300          | 118             | 80-120            |       |

Lab Batch #:823318

Sample: 389624-001 SD / MSD

Batch: 1 Matrix:Soil

Units: mg/kg

Date Analyzed: 09/15/10 06:26

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0349           | 0.0300          | 116             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0354           | 0.0300          | 118             | 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: 14 " Vac to Jal Legacy

Work Orders 389406,

Project ID: SRS# 2009-92

Lab Batch #: 823318

Sample: 389406-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/15/10 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  | 0.0256           | 0.0300          | 85              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0409           | 0.0300          | 136             | 80-120            | **    |

Lab Batch #: 823318

Sample: 389406-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/15/10 13:44

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0236           | 0.0300          | 79              | 80-120            | **    |
| 4-Bromofluorobenzene | 0.0281           | 0.0300          | 94              | 80-120            |       |

Lab Batch #: 823461

Sample: 573500-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/15/10 18:15

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0327           | 0.0300          | 109             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0307           | 0.0300          | 102             | 80-120            |       |

Lab Batch #: 823461

Sample: 573500-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/15/10 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  | 0.0261           | 0.0300          | 87              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0309           | 0.0300          | 103             | 80-120            |       |

Lab Batch #: 823461

Sample: 573500-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/15/10 19:40

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0263           | 0.0300          | 88              | 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: 14 " Vac to Jal Legacy

Work Orders 389406,

Project ID: SRS# 2009-92

Lab Batch #: 823461

Sample: 389624-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/15/10 20:23

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0336           | 0.0300          | 112             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0330           | 0.0300          | 110             | 80-120            |       |

Lab Batch #: 823461

Sample: 389624-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/15/10 20:44

### 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 | 0.0312           | 0.0300          | 104             | 80-120            |       |

Lab Batch #: 823461

Sample: 389406-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/16/10 04:09

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0209           | 0.0300          | 70              | 80-120            | **    |
| 4-Bromofluorobenzene | 0.0607           | 0.0300          | 202             | 80-120            | **    |

Lab Batch #: 822482

Sample: 572990-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/11/10 00:13

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 129              | 100             | 129             | 70-135            |       |
| o-Terphenyl       | 61.1             | 50.2            | 122             | 70-135            |       |

Lab Batch #: 822482

Sample: 572990-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/11/10 00:32

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 126              | 100             | 126             | 70-135            |       |
| o-Terphenyl       | 59.3             | 50.0            | 119             | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

All results are based on MDL and validated for QC purposes



## Form 2 - Surrogate Recoveries

Project Name: 14 " Vac to Jal Legacy

Work Orders 389406,

Project ID:SRS# 2009-92

Lab Batch #:822482

Sample: 572990-1-BLK / BLK

Batch: 1 Matrix:Solid

Units: mg/kg

Date Analyzed: 09/11/10 00:52

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 112                 | 100                | 112                   | 70-135               |       |
| o-Terphenyl                   | 60.3                | 50.2               | 120                   | 70-135               |       |

Lab Batch #:822482

Sample: 389406-001 / SMP

Batch: 1 Matrix:Soil

Units: mg/kg

Date Analyzed: 09/11/10 03:50

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 117                 | 100                | 117                   | 70-135               |       |
| o-Terphenyl                   | 45.5                | 50.2               | 91                    | 70-135               |       |

Lab Batch #:822482

Sample: 389406-002 / SMP

Batch: 1 Matrix:Soil

Units: mg/kg

Date Analyzed: 09/11/10 04:10

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 123                 | 99.5               | 124                   | 70-135               |       |
| o-Terphenyl                   | 56.9                | 49.8               | 114                   | 70-135               |       |

Lab Batch #:822482

Sample: 389406-003 / SMP

Batch: 1 Matrix:Soil

Units: mg/kg

Date Analyzed: 09/11/10 04:49

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 123                 | 99.5               | 124                   | 70-135               |       |
| o-Terphenyl                   | 60.4                | 49.8               | 121                   | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## BS / BSD Recoveries



**Project Name: 14 " Vac to Jal Legacy**

**Work Order #: 389406**

**Analyst: SEE**

**Date Prepared: 09/14/2010**

**Project ID: SRS# 2009-92**

**Date Analyzed: 09/15/2010**

**Lab Batch ID: 823318**

**Sample: 573462-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| <b>BTEX by EPA 8021</b> | <b>Blank Sample Result [A]</b> | <b>Spike Added [B]</b> | <b>Blank Spike Result [C]</b> | <b>Blank Spike %R [D]</b> | <b>Spike Added [E]</b> | <b>Blank Spike Duplicate Result [F]</b> | <b>Blk. Spk Dup. %R [G]</b> | <b>RPD %</b> | <b>Control Limits %R</b> | <b>Control Limits %RPD</b> | <b>Flag</b> |
|-------------------------|--------------------------------|------------------------|-------------------------------|---------------------------|------------------------|---|-----------------------------|--------------|--------------------------|----------------------------|-------------|
| <b>Analytes</b>         |                                |                        |                               |                           |                        |   |                             |              |                          |                            |             |
| Benzene                 | ND                             | 0.1004                 | 0.0893                        | 89                        | 0.1006                 | 0.0867                                  | 86                          | 3            | 70-130                   | 35                         |             |
| Toluene                 | ND                             | 0.1004                 | 0.0886                        | 88                        | 0.1006                 | 0.0860                                  | 85                          | 3            | 70-130                   | 35                         |             |
| Ethylbenzene            | ND                             | 0.1004                 | 0.0928                        | 92                        | 0.1006                 | 0.0901                                  | 90                          | 3            | 71-129                   | 35                         |             |
| m,p-Xylenes             | ND                             | 0.2008                 | 0.1797                        | 89                        | 0.2012                 | 0.1746                                  | 87                          | 3            | 70-135                   | 35                         |             |
| o-Xylene                | ND                             | 0.1004                 | 0.0927                        | 92                        | 0.1006                 | 0.0899                                  | 89                          | 3            | 71-133                   | 35                         |             |

**Analyst: BRB**

**Date Prepared: 09/15/2010**

**Date Analyzed: 09/15/2010**

**Lab Batch ID: 823461**

**Sample: 573500-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| <b>BTEX by EPA 8021</b> | <b>Blank Sample Result [A]</b> | <b>Spike Added [B]</b> | <b>Blank Spike Result [C]</b> | <b>Blank Spike %R [D]</b> | <b>Spike Added [E]</b> | <b>Blank Spike Duplicate Result [F]</b> | <b>Blk. Spk Dup. %R [G]</b> | <b>RPD %</b> | <b>Control Limits %R</b> | <b>Control Limits %RPD</b> | <b>Flag</b> |
|-------------------------|--------------------------------|------------------------|-------------------------------|---------------------------|------------------------|---|-----------------------------|--------------|--------------------------|----------------------------|-------------|
| <b>Analytes</b>         |                                |                        |                               |                           |                        |   |                             |              |                          |                            |             |
| Benzene                 | ND                             | 0.1004                 | 0.0787                        | 78                        | 0.0992                 | 0.0760                                  | 77                          | 3            | 70-130                   | 35                         |             |
| Toluene                 | ND                             | 0.1004                 | 0.0765                        | 76                        | 0.0992                 | 0.0746                                  | 75                          | 3            | 70-130                   | 35                         |             |
| Ethylbenzene            | ND                             | 0.1004                 | 0.0818                        | 81                        | 0.0992                 | 0.0792                                  | 80                          | 3            | 71-129                   | 35                         |             |
| m,p-Xylenes             | ND                             | 0.2008                 | 0.1627                        | 81                        | 0.1984                 | 0.1577                                  | 79                          | 3            | 70-135                   | 35                         |             |
| o-Xylene                | ND                             | 0.1004                 | 0.0760                        | 76                        | 0.0992                 | 0.0724                                  | 73                          | 5            | 71-133                   | 35                         |             |

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

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

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

All results are based on MDL and Validated for QC Purposes



## BS / BSD Recoveries



**Project Name: 14 " Vac to Jal Legacy**

**Work Order #: 389406**

**Analyst: BEV**

**Date Prepared: 09/10/2010**

**Project ID: SRS# 2009-92**

**Date Analyzed: 09/11/2010**

**Lab Batch ID: 822482**

**Sample: 572990-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| TPH by SW8015 Mod                  | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes                           |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| C6-C12 Gasoline Range Hydrocarbons | ND                            | 1000                  | 1070                            | 107                         | 1000                  | 1020                                      | 102                           | 5        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | ND                            | 1000                  | 937                             | 94                          | 1000                  | 1020                                      | 102                           | 8        | 70-135                  | 35                        |      |

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

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

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

All results are based on MDL and Validated for QC Purposes



# Form 3 - M MSD Recoveries



Project Name: 14 " Vac to Jal Legacy

Work Order #: 389406

Project ID: SRS# 2009-92

Lab Batch ID: 823318

QC- Sample ID: 389624-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 09/15/2010

Date Prepared: 09/14/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| Benzene                      | ND                                | 0.0998                | 0.0615                         | 62                            | 0.0998                | 0.0836                                   | 84                          | 30       | 70-130                  | 35                        | X    |
| Toluene                      | ND                                | 0.0998                | 0.0651                         | 65                            | 0.0998                | 0.0823                                   | 82                          | 23       | 70-130                  | 35                        | X    |
| Ethylbenzene                 | ND                                | 0.0998                | 0.0717                         | 72                            | 0.0998                | 0.0858                                   | 86                          | 18       | 71-129                  | 35                        |      |
| m,p-Xylenes                  | ND                                | 0.1996                | 0.1410                         | 71                            | 0.1996                | 0.1663                                   | 83                          | 16       | 70-135                  | 35                        |      |
| o-Xylene                     | ND                                | 0.0998                | 0.0711                         | 71                            | 0.0998                | 0.0839                                   | 84                          | 17       | 71-133                  | 35                        |      |

Lab Batch ID: 823461

QC- Sample ID: 389624-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 09/15/2010

Date Prepared: 09/15/2010

Analyst: BRB

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| Benzene                      | ND                                | 0.0996                | 0.0901                         | 90                            | 0.0996                | 0.0885                                   | 89                          | 2        | 70-130                  | 35                        |      |
| Toluene                      | ND                                | 0.0996                | 0.0875                         | 88                            | 0.0996                | 0.0855                                   | 86                          | 2        | 70-130                  | 35                        |      |
| Ethylbenzene                 | ND                                | 0.0996                | 0.0917                         | 92                            | 0.0996                | 0.0870                                   | 87                          | 5        | 71-129                  | 35                        |      |
| m,p-Xylenes                  | ND                                | 0.1992                | 0.1808                         | 91                            | 0.1992                | 0.1736                                   | 87                          | 4        | 70-135                  | 35                        |      |
| o-Xylene                     | ND                                | 0.0996                | 0.0802                         | 81                            | 0.0996                | 0.0765                                   | 77                          | 5        | 71-133                  | 35                        |      |

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

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

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





## Sample Duplicate Recovery



**Project Name:** 14 " Vac to Jal Legacy

**Work Order #:** 389406

**Lab Batch #:** 822471

**Date Analyzed:** 09/11/2010

**Date Prepared:** 09/11/2010

**Project ID:** SRS# 2009-92

**Analyst:** JLG

**QC- Sample ID:** 389332-001 D

**Batch #:** 1

**Matrix:** Soil

**Reporting Units:** %

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                                |                                      |     |                           |      |
|------------------------------------|--------------------------------|--------------------------------------|-----|---------------------------|------|
| Percent Moisture                   | Parent<br>Sample Result<br>[A] | Sample<br>Duplicate<br>Result<br>[B] | RPD | Control<br>Limits<br>%RPD | Flag |
| Analyte                            |                                |                                      |     |                           |      |
| Percent Moisture                   | 2.08                           | 1.86                                 | 11  | 20                        |      |

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

All Results are based on MDL and validated for QC purposes

BRL - Below Reporting Limit



**XENCO Laboratories**

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

**Prelogin / Nonconformance Report - Sample Log-In**Client: PlainsDate/Time: 9/10/10 14:05Lab ID #: 389406Initials: AS**Sample Receipt Checklist**

|   |              |              |              |              |
|---|--------------|--------------|--------------|--------------|
| 1. Samples on ice?  | Blue         | Water        | No           |              |
| 2. Shipping container in good condition?                            | Yes          | No           | None         |              |
| 3. Custody seals intact on shipping container (cooler) and bottles? | Yes          | No           | N/A          |              |
| 4. Chain of Custody present?  | Yes          | No           |              |              |
| 5. Sample instructions complete on chain of custody?                | Yes          | No           |              |              |
| 6. Any missing / extra samples?                                     | Yes          | No           |              |              |
| 7. Chain of custody signed when relinquished / received?            | Yes          | No           |              |              |
| 8. Chain of custody agrees with sample label(s)?                    | Yes          | No           |              |              |
| 9. Container labels legible and intact?                             | Yes          | No           |              |              |
| 10. Sample matrix / properties agree with chain of custody?         | Yes          | No           |              |              |
| 11. Samples in proper container / bottle?                           | Yes          | No           |              |              |
| 12. Samples properly preserved?                                     | Yes          | No           | N/A          |              |
| 13. Sample container intact?  | Yes          | No           |              |              |
| 14. Sufficient sample amount for indicated test(s)?                 | Yes          | No           |              |              |
| 15. All samples received within sufficient hold time?               | Yes          | No           |              |              |
| 16. Subcontract of sample(s)?                                       | Yes          | No           | N/A          |              |
| 17. VOC sample have zero head space?                                | Yes          | No           | N/A          |              |
| 18. Cooler 1 No.  | Cooler 2 No. | Cooler 3 No. | Cooler 4 No. | Cooler 5 No. |
| lbs 5.1 °C  | lbs °C       | lbs °C       | lbs °C       | lbs °C       |

**Nonconformance Documentation**

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

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

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

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

**Analytical Report 390387**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14" Vac to Jal Legacy**

**2009-92**

**27-SEP-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

**Xenco-Houston (EPA Lab code: TX00122):**

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

**Xenco-Atlanta (EPA Lab Code: GA00046):**

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (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)

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

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

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North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

**Xenco Phoenix (EPA Lab Code: AZ00901):**

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901):** Arizona (AZM757)

**Xenco Tucson (EPA Lab code:AZ000989):** Arizona (AZ0758)



27-SEP-10

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

Reference: XENCO Report No: **390387**  
**14" Vac to Jal Legacy**  
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 390387. 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. 390387 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 390387



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

| Sample Id       | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|-----------------|--------|-----------------|--------------|---------------|
| Screened SP #17 | S      | Sep-16-10 14:30 |              | 390387-001    |
| Screened SP #18 | S      | Sep-16-10 14:40 |              | 390387-002    |
| Screened SP #19 | S      | Sep-16-10 14:55 |              | 390387-003    |



## CASE NARRATIVE

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

**Project Name:** 14" Vac to Jal Legacy



**Project ID:** 2009-92

**Work Order Number:** 390387

**Report Date:** 27-SEP-10

**Date Received:** 09/17/2010

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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-823839 Percent Moisture

None

**Batch:** LBA-823856 TPH by SW8015 Mod

None

**Batch:** LBA-824704 BTEX by EPA 8021

SW8021BM

Batch 824704, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 390387-001,390387-003,390387-002.



# Certificate of Analysis Summary 390387

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy



Project Id: 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Fri Sep-17-10 02:50 pm


Report Date: 27-SEP-10

Project Manager: Brent Barron, II

| <i>Analysis Requested</i>          | <i>Lab Id:</i>    | 390387-001      | 390387-002      | 390387-003      |  |  |  |
|------------------------------------|-------------------|-----------------|-----------------|-----------------|--|--|--|
|                                    | <i>Field Id:</i>  | Screened SP #17 | Screened SP #18 | Screened SP #19 |  |  |  |
|                                    | <i>Depth:</i>     |                 |                 |                 |  |  |  |
|                                    | <i>Matrix:</i>    | SOIL            | SOIL            | SOIL            |  |  |  |
|                                    | <i>Sampled:</i>   | Sep-16-10 14:30 | Sep-16-10 14:40 | Sep-16-10 14:55 |  |  |  |
| <b>BTEX by EPA 8021</b>            | <i>Extracted:</i> | Sep-25-10 15:00 | Sep-25-10 15:00 | Sep-25-10 15:00 |  |  |  |
|                                    | <i>Analyzed:</i>  | Sep-25-10 23:56 | Sep-26-10 00:19 | Sep-26-10 00:43 |  |  |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL        |  |  |  |
| Benzene                            |                   | ND 0.0214       | ND 0.0213       | ND 0.0211       |  |  |  |
| Toluene                            |                   | ND 0.0427       | 0.0451 0.0425   | 0.0433 0.0422   |  |  |  |
| Ethylbenzene                       |                   | 0.1657 0.0214   | 0.2326 0.0213   | 0.1387 0.0211   |  |  |  |
| m,p-Xylenes                        |                   | 0.7331 0.0427   | 1.208 0.0425    | 1.033 0.0422    |  |  |  |
| o-Xylene                           |                   | 0.7071 0.0214   | 1.099 0.0213    | 0.8556 0.0211   |  |  |  |
| Xylenes, Total                     |                   | 1.4402 0.0214   | 2.307 0.0213    | 1.889 0.0211    |  |  |  |
| Total BTEX                         |                   | 1.6059 0.0214   | 2.585 0.0213    | 2.071 0.0211    |  |  |  |
| <b>Percent Moisture</b>            | <i>Extracted:</i> |                 |                 |                 |  |  |  |
|                                    | <i>Analyzed:</i>  | Sep-21-10 08:21 | Sep-21-10 08:21 | Sep-21-10 08:21 |  |  |  |
|                                    | <i>Units/RL:</i>  | % RL            | % RL            | % RL            |  |  |  |
| Percent Moisture                   |                   | 6.32 1.00       | 5.95 1.00       | 5.24 1.00       |  |  |  |
| <b>TPH by SW8015 Mod</b>           | <i>Extracted:</i> | Sep-20-10 10:00 | Sep-20-10 10:00 | Sep-20-10 10:00 |  |  |  |
|                                    | <i>Analyzed:</i>  | Sep-20-10 16:32 | Sep-20-10 16:51 | Sep-20-10 17:10 |  |  |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL        | mg/kg RL        | mg/kg RL        |  |  |  |
| C6-C12 Gasoline Range Hydrocarbons |                   | 488 16.0        | 538 15.9        | 501 15.8        |  |  |  |
| C12-C28 Diesel Range Hydrocarbons  |                   | 2780 16.0       | 3070 15.9       | 3570 15.8       |  |  |  |
| C28-C35 Oil Range Hydrocarbons     |                   | 97.3 16.0       | 99.2 15.9       | 139 15.8        |  |  |  |
| Total TPH                          |                   | 3365 16.0       | 3707 15.9       | 4210 15.8       |  |  |  |

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



## Flagging Criteria

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

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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|   | Phone          | Fax            |
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| 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: 14" Vac to Jal Legacy

Work Orders : 390387,

Lab Batch #: 824704

Sample: 574328-1-BKS / BKS

Project ID: 2009-92

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/25/10 15:48

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0331           | 0.0300          | 110             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0340           | 0.0300          | 113             | 80-120            |       |

Lab Batch #: 824704

Sample: 574328-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/25/10 16:12

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0331           | 0.0300          | 110             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0341           | 0.0300          | 114             | 80-120            |       |

Lab Batch #: 824704

Sample: 574328-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/25/10 17:21

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0299           | 0.0300          | 100             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0321           | 0.0300          | 107             | 80-120            |       |

Lab Batch #: 824704

Sample: 390697-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/25/10 21:37

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0340           | 0.0300          | 113             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0359           | 0.0300          | 120             | 80-120            |       |

Lab Batch #: 824704

Sample: 390697-003 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/25/10 22:00

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0335           | 0.0300          | 112             | 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.

## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 390387,

Project ID: 2009-92

Lab Batch #: 824704

Sample: 390387-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/25/10 23:56

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0287           | 0.0300          | 96              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0410           | 0.0300          | 137             | 80-120            | **    |

Lab Batch #: 824704

Sample: 390387-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/26/10 00:19

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0274           | 0.0300          | 91              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0395           | 0.0300          | 132             | 80-120            | **    |

Lab Batch #: 824704

Sample: 390387-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/26/10 00:43

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0272           | 0.0300          | 91              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0378           | 0.0300          | 126             | 80-120            | **    |

Lab Batch #: 823856

Sample: 573814-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/20/10 15:34

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 84.4             | 99.8            | 85              | 70-135            |       |
| o-Terphenyl       | 57.4             | 49.9            | 115             | 70-135            |       |

Lab Batch #: 823856

Sample: 573814-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/20/10 15:53

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |                  |                 |                 |                   |       |
| 1-Chlorooctane    | 82.0             | 100             | 82              | 70-135            |       |
| o-Terphenyl       | 47.3             | 50.2            | 94              | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 390387,

Lab Batch #: 823856

Sample: 573814-1-BLK / BLK

Project ID: 2009-92

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/20/10 16:13

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 81.7                | 99.8               | 82                    | 70-135               |       |
| o-Terphenyl                   | 44.8                | 49.9               | 90                    | 70-135               |       |

Lab Batch #: 823856

Sample: 390387-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/20/10 16:32

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 85.4                | 100                | 85                    | 70-135               |       |
| o-Terphenyl                   | 58.0                | 50.1               | 116                   | 70-135               |       |

Lab Batch #: 823856

Sample: 390387-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/20/10 16:51

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 87.3                | 99.5               | 88                    | 70-135               |       |
| o-Terphenyl                   | 46.7                | 49.8               | 94                    | 70-135               |       |

Lab Batch #: 823856

Sample: 390387-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/20/10 17:10

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 87.2                | 99.5               | 88                    | 70-135               |       |
| o-Terphenyl                   | 47.6                | 49.8               | 96                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## BS / BSD Recoveries



**Project Name: 14" Vac to Jal Legacy**

**Work Order #: 390387**

**Analyst: BRB**

**Date Prepared: 09/25/2010**

**Project ID: 2009-92**

**Date Analyzed: 09/25/2010**

**Lab Batch ID: 824704**

**Sample: 574328-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| <b>BTEX by EPA 8021</b> | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|-------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>         |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| Benzene                 | ND                                     | 0.1000                         | 0.0896                                    | 90                                    | 0.1                            | 0.0892  | 89                                      | 0                | 70-130                           | 35                                 |             |
| Toluene                 | ND                                     | 0.1000                         | 0.0884                                    | 88                                    | 0.1                            | 0.0879  | 88                                      | 1                | 70-130                           | 35                                 |             |
| Ethylbenzene            | ND                                     | 0.1000                         | 0.0908                                    | 91                                    | 0.1                            | 0.0911  | 91                                      | 0                | 71-129                           | 35                                 |             |
| m,p-Xylenes             | ND                                     | 0.2000                         | 0.1793                                    | 90                                    | 0.2                            | 0.1798  | 90                                      | 0                | 70-135                           | 35                                 |             |
| o-Xylene                | ND                                     | 0.1000                         | 0.0905                                    | 91                                    | 0.1                            | 0.0902  | 90                                      | 0                | 71-133                           | 35                                 |             |

**Analyst: BEV**

**Date Prepared: 09/20/2010**

**Date Analyzed: 09/20/2010**

**Lab Batch ID: 823856**

**Sample: 573814-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| <b>TPH by SW8015 Mod</b>           | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|------------------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>                    |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| C6-C12 Gasoline Range Hydrocarbons | ND                                     | 998                            | 1080                                      | 108                                   | 1000                           | 1060  | 106                                     | 2                | 70-135                           | 35                                 |             |
| C12-C28 Diesel Range Hydrocarbons  | ND                                     | 998                            | 1020                                      | 102                                   | 1000                           | 988   | 99                                      | 3                | 70-135                           | 35                                 |             |

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

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

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

All results are based on MDL and Validated for QC Purposes



# Form 3 - MSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 390387

Project ID: 2009-92

Lab Batch ID: 824704

QC- Sample ID: 390697-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 09/25/2010

Date Prepared: 09/25/2010

Analyst: BRB

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
|                              |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
| Benzene                      | ND                                | 0.1079                | 0.0976                         | 90                            | 0.1079                | 0.0950                                   | 88                          | 3        | 70-130                  | 35                        |      |
| Toluene                      | ND                                | 0.1079                | 0.0960                         | 89                            | 0.1079                | 0.0934                                   | 87                          | 3        | 70-130                  | 35                        |      |
| Ethylbenzene                 | ND                                | 0.1079                | 0.0993                         | 92                            | 0.1079                | 0.0964                                   | 89                          | 3        | 71-129                  | 35                        |      |
| m,p-Xylenes                  | ND                                | 0.2158                | 0.1964                         | 91                            | 0.2158                | 0.1899                                   | 88                          | 3        | 70-135                  | 35                        |      |
| o-Xylene                     | ND                                | 0.1079                | 0.0988                         | 92                            | 0.1079                | 0.0954                                   | 88                          | 4        | 71-133                  | 35                        |      |

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

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

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



## Sample Duplicate Recovery



**Project Name: 14" Vac to Jal Legacy**

**Work Order #: 390387**

**Lab Batch #: 823839**

**Project ID: 2009-92**

**Date Analyzed: 09/21/2010**

**Date Prepared: 09/21/2010**

**Analyst: JLG**

**QC- Sample ID: 390387-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 6.32                     | 5.73                        | 10  | 20                  |      |

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

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

BRL - Below Reporting Limit

**Environmental Lab of Texas**

### 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: Camille Bryant

Project Name: 14" Vac to Jal Legacy

Company Name Basin Environmental Consulting, LLC

Project #: SRS# 2009-92

Company Address: P O Box 381

Project Loc: Lea County, NM

City/State/Zip Lovington, NM 88260

PO #. PAA-J Henry

Telephone No. (575) 605-7210 Fax No. (505) 396-1429

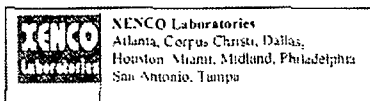
Report Format ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature *(Signature)*

Fax No. (505) 396-1429 Report Format ☒ Standard ☐ TRRP ☐ NPDES  
e-mail cjbryant@basin-consulting.com

[illegible]





Document Title: Sample Receipt Checklist  
Document No.: NYS-SRC  
Revision: Date: No 60, 05/18/10  
Effective Date: 05/20/10  
Page No.: 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains / Basin Env  
Date/Time: 09-17-10 @ 1450  
Lab ID #: 390387  
Initials: JMF

Sample Receipt Checklist

|  |              |              |              |              |
|--|--------------|--------------|--------------|--------------|
| 1. Sample on ice?  | Blue         | <u>Water</u> | Nc           |              |
| 2. Shipping container in good condition?   | <u>Yes</u>   | No           | None         |              |
| 3. Custody seals intact on shipping container (cooler) and <u>bottles</u> <u>as labels</u> | Yes          | 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 label(s)?   | <u>Yes</u>   | No           |              |              |
| 9. Container labels 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          | <u>No</u>    | N/A          |              |
| 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 5.6 °C   | lbs °C       | lbs °C       | lbs °C       | lbs °C       |

Nonconformance Documentation

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

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

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

- Check all that apply
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5 B 3.1 a 1.
  - ☐ Initial and Backup Temperature confirm out of temperature conditions
  - ☐ Client understands and would like to proceed with analysis

**Analytical Report 391429**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14" Vac to Jal Legacy**

**SRS # 2009-92**

**01-OCT-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

**Xenco-Houston (EPA Lab code: TX00122):**

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

**Xenco-Atlanta (EPA Lab Code: GA00046):**

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (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: FL01273):**

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

**Xenco Phoenix (EPA Lab Code: AZ00901):**

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901):** Arizona (AZM757)

**Xenco Tucson (EPA Lab code:AZ000989):** Arizona (AZ0758)



01-OCT-10

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

Reference: XENCO Report No: **391429**  
**14" Vac to Jal Legacy**  
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 391429. 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. 391429 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 391429



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

| Sample Id        | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|------------------|--------|-----------------|--------------|---------------|
| Screened SP # 20 | S      | Sep-24-10 13:30 |              | 391429-001    |
| Screened SP # 21 | S      | Sep-24-10 13:45 |              | 391429-002    |
| Screened SP # 22 | S      | Sep-24-10 14:00 |              | 391429-003    |
| Screened SP # 23 | S      | Sep-24-10 14:15 |              | 391429-004    |
| Screened SP # 24 | S      | Sep-24-10 14:30 |              | 391429-005    |



## CASE NARRATIVE

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

**Project Name:** 14" Vac to Jal Legacy



**Project ID:** SRS # 2009-92

**Work Order Number:** 391429

**Report Date:** 01-OCT-10

**Date Received:** 09/27/2010

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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-824908 Percent Moisture

Batch: LBA-824911 TPH by SW8015 Mod

Batch: LBA-825540 BTEX by EPA 8021  
SW8021BM

Batch 825540, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis  
Samples affected are: 391429-005,391429-001.

SW8021BM

Batch 825540, Benzene, Ethylbenzene, Toluene, m,p-Xylenes , o-Xylene RPD was outside QC limits.

Samples affected are: 391429-001, -005, -003, -002, -004

SW8021BM

Batch 825540, Benzene, Toluene recovered below QC limits in the Matrix Spike. Ethylbenzene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 391429-001, -005, -003, -002, -004.

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

The Matrix Spike for this batch was improperly spiked causing very low recoveries. The BKS and BSD were within limits therefore validating the batch.



# Certificate of Analysis Summary 391429

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy



Project Id: SRS # 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Mon Sep-27-10 03:22 pm


Report Date: 01-OCT-10

Project Manager: Brent Barron, II

| Analysis Requested                 | Lab Id:    | 391429-001       | 391429-002       | 391429-003       | 391429-004       | 391429-005       |  |
|------------------------------------|------------|------------------|------------------|------------------|------------------|------------------|--|
|                                    | Field Id:  | Screened SP # 20 | Screened SP # 21 | Screened SP # 22 | Screened SP # 23 | Screened SP # 24 |  |
|                                    | Depth:     |                  |                  |                  |                  |                  |  |
|                                    | Matrix:    | SOIL             | SOIL             | SOIL             | SOIL             | SOIL             |  |
|                                    | Sampled:   | Sep-24-10 13:30  | Sep-24-10 13:45  | Sep-24-10 14:00  | Sep-24-10 14:15  | Sep-24-10 14:30  |  |
| BTEX by EPA 8021                   | Extracted: | Sep-30-10 15:30  | Sep-30-10 15:30  | Sep-30-10 15:30  | Sep-30-10 15:30  | Sep-30-10 15:30  |  |
|                                    | Analyzed:  | Oct-01-10 01:32  | Oct-01-10 01:55  | Oct-01-10 02:18  | Oct-01-10 02:41  | Oct-01-10 03:05  |  |
|                                    | Units/RL:  | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         |  |
| Benzene                            |            | ND 0.0217        | ND 0.0221        | ND 0.0213        | ND 0.0217        | ND 0.0213        |  |
| Toluene                            |            | 0.0572 0.0433    | ND 0.0441        | ND 0.0425        | ND 0.0433        | ND 0.0427        |  |
| Ethylbenzene                       |            | 0.1376 0.0217    | ND 0.0221        | 0.0423 0.0213    | ND 0.0217        | 0.1157 0.0213    |  |
| m,p-Xylenes                        |            | 0.5285 0.0433    | 0.0755 0.0441    | 0.2000 0.0425    | 0.0925 0.0433    | 0.8306 0.0427    |  |
| o-Xylene                           |            | 0.2740 0.0217    | 0.0322 0.0221    | 0.1756 0.0213    | 0.0518 0.0217    | 0.7454 0.0213    |  |
| Xylenes, Total                     |            | 0.8025 0.0217    | 0.1077 0.0221    | 0.3756 0.0213    | 0.1443 0.0217    | 1.5760 0.0213    |  |
| Total BTEX                         |            | 0.9973 0.0217    | 0.1077 0.0221    | 0.4179 0.0213    | 0.1443 0.0217    | 1.6917 0.0213    |  |
| Percent Moisture                   | Extracted: | Sep-28-10 08:30  | Sep-28-10 08:30  | Sep-28-10 08:30  | Sep-28-10 08:30  | Sep-28-10 08:30  |  |
|                                    | Analyzed:  |                  |                  |                  |                  |                  |  |
|                                    | Units/RL:  | % RL             | % RL             | % RL             | % RL             | % RL             |  |
| Percent Moisture                   |            | 7.67 1.00        | 9.37 1.00        | 5.91 1.00        | 7.67 1.00        | 6.28 1.00        |  |
| TPH by SW8015 Mod                  | Extracted: | Sep-27-10 16:30  | Sep-27-10 16:30  | Sep-27-10 16:30  | Sep-27-10 16:30  | Sep-27-10 16:30  |  |
|                                    | Analyzed:  | Sep-27-10 20:49  | Sep-27-10 21:08  | Sep-27-10 21:28  | Sep-27-10 21:48  | Sep-27-10 22:07  |  |
|                                    | Units/RL:  | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         |  |
| C6-C12 Gasoline Range Hydrocarbons |            | 350 16.3         | 132 16.5         | 436 15.9         | 161 16.2         | 850 15.9         |  |
| C12-C28 Diesel Range Hydrocarbons  |            | 1130 16.3        | 390 16.5         | 1930 15.9        | 640 16.2         | 2480 15.9        |  |
| C28-C35 Oil Range Hydrocarbons     |            | 56.1 16.3        | 19.7 16.5        | 85.1 15.9        | 39.2 16.2        | 158 15.9         |  |
| Total TPH                          |            | 1536 16.3        | 542 16.5         | 2451 15.9        | 840 16.2         | 3488 15.9        |  |

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

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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| 842 Cantwell Lane, Corpus Christi, TX 78408 | (361) 884-0371 | (361) 884-9116 |

# Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 391429,

Lab Batch #: 825540

Sample: 574821-1-BKS / BKS

Batch: 1 Matrix: Solid

Project ID: SRS # 2009-92

Units: mg/kg

Date Analyzed: 09/30/10 17:48

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0339           | 0.0300          | 113             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0343           | 0.0300          | 114             | 80-120            |       |

Lab Batch #: 825540

Sample: 574821-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/30/10 18:11

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0339           | 0.0300          | 113             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0345           | 0.0300          | 115             | 80-120            |       |

Lab Batch #: 825540

Sample: 574821-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/30/10 19:21

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0295           | 0.0300          | 98              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0325           | 0.0300          | 108             | 80-120            |       |

Lab Batch #: 825540

Sample: 391751-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/10 23:36

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0304           | 0.0300          | 101             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0343           | 0.0300          | 114             | 80-120            |       |

Lab Batch #: 825540

Sample: 391751-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/30/10 23:59

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0342           | 0.0300          | 114             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0328           | 0.0300          | 109             | 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

^ If results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 391429,

Project ID: SRS # 2009-92

Lab Batch #: 825540

Sample: 391429-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/10 01:32

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene          | 0.0277              | 0.0300             | 92                    | 80-120               |       |
| 4-Bromofluorobenzene         | 0.0363              | 0.0300             | 121                   | 80-120               | **    |

Lab Batch #: 825540

Sample: 391429-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/10 01:55

### SURROGATE RECOVERY STUDY

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

Lab Batch #: 825540

Sample: 391429-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/10 02:18

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene          | 0.0284              | 0.0300             | 95                    | 80-120               |       |
| 4-Bromofluorobenzene         | 0.0359              | 0.0300             | 120                   | 80-120               |       |

Lab Batch #: 825540

Sample: 391429-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/10 02:41

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene          | 0.0291              | 0.0300             | 97                    | 80-120               |       |
| 4-Bromofluorobenzene         | 0.0341              | 0.0300             | 114                   | 80-120               |       |

Lab Batch #: 825540

Sample: 391429-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/01/10 03:05

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene          | 0.0266              | 0.0300             | 89                    | 80-120               |       |
| 4-Bromofluorobenzene         | 0.0382              | 0.0300             | 127                   | 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: 14" Vac to Jal Legacy

Work Orders : 391429,

Project ID: SRS # 2009-92

Lab Batch #: 824911

Sample: 574443-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/27/10 16:17

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 79.0                | 100                | 79                    | 70-135               |       |
| o-Terphenyl                   | 45.5                | 50.1               | 91                    | 70-135               |       |

Lab Batch #: 824911

Sample: 574443-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/27/10 16:36

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 84.5                | 100                | 85                    | 70-135               |       |
| o-Terphenyl                   | 46.8                | 50.2               | 93                    | 70-135               |       |

Lab Batch #: 824911

Sample: 574443-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/27/10 16:56

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 80.3                | 100                | 80                    | 70-135               |       |
| o-Terphenyl                   | 42.5                | 50.1               | 85                    | 70-135               |       |

Lab Batch #: 824911

Sample: 391429-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/27/10 20:49

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 85.3                | 100                | 85                    | 70-135               |       |
| o-Terphenyl                   | 44.4                | 50.1               | 89                    | 70-135               |       |

Lab Batch #: 824911

Sample: 391429-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/27/10 21:08

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 84.2                | 99.5               | 85                    | 70-135               |       |
| o-Terphenyl                   | 48.1                | 49.8               | 97                    | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

^ If results are based on MDL and validated for QC purposes.

## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 391429,

Project ID: SRS # 2009-92

Lab Batch #: 824911

Sample: 391429-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/27/10 21:28

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane                | 85.4             | 99.5            | 86              | 70-135            |       |
| o-Terphenyl                   | 42.4             | 49.8            | 85              | 70-135            |       |

Lab Batch #: 824911

Sample: 391429-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/27/10 21:48

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane                | 84.5             | 99.8            | 85              | 70-135            |       |
| o-Terphenyl                   | 44.9             | 49.9            | 90              | 70-135            |       |

Lab Batch #: 824911

Sample: 391429-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/27/10 22:07

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane                | 92.0             | 99.5            | 92              | 70-135            |       |
| o-Terphenyl                   | 37.5             | 49.8            | 75              | 70-135            |       |

Lab Batch #: 824911

Sample: 391387-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/27/10 22:27

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane                | 84.5             | 99.8            | 85              | 70-135            |       |
| o-Terphenyl                   | 42.8             | 49.9            | 86              | 70-135            |       |

Lab Batch #: 824911

Sample: 391387-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/27/10 22:47

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane                | 83.0             | 99.8            | 83              | 70-135            |       |
| o-Terphenyl                   | 41.7             | 49.9            | 84              | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 391429

Analyst: BRB

Date Prepared: 09/30/2010

Project ID: SRS # 2009-92

Date Analyzed: 09/30/2010

Lab Batch ID: 825540

Sample: 574821-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| BTEX by EPA 8021 | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes         |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| Benzene          | ND                            | 0.1000                | 0.1053                          | 105                         | 0.1                   | 0.1060                                    | 106                           | 1        | 70-130                  | 35                        |      |
| Toluene          | ND                            | 0.1000                | 0.1034                          | 103                         | 0.1                   | 0.1043                                    | 104                           | 1        | 70-130                  | 35                        |      |
| Ethylbenzene     | ND                            | 0.1000                | 0.1070                          | 107                         | 0.1                   | 0.1078                                    | 108                           | 1        | 71-129                  | 35                        |      |
| m,p-Xylenes      | ND                            | 0.2000                | 0.2084                          | 104                         | 0.2                   | 0.2098                                    | 105                           | 1        | 70-135                  | 35                        |      |
| o-Xylene         | ND                            | 0.1000                | 0.1053                          | 105                         | 0.1                   | 0.1054                                    | 105                           | 0        | 71-133                  | 35                        |      |

Analyst: BEV

Date Prepared: 09/27/2010

Date Analyzed: 09/27/2010

Lab Batch ID: 824911

Sample: 574443-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| TPH by SW8015 Mod                  | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes                           |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| C6-C12 Gasoline Range Hydrocarbons | ND                            | 1000                  | 1030                            | 103                         | 1000                  | 1070                                      | 107                           | 4        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons  | ND                            | 1000                  | 942                             | 94                          | 1000                  | 1030                                      | 103                           | 9        | 70-135                  | 35                        |      |

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS / MSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 391429

Project ID: SRS # 2009-92

Lab Batch ID: 825540

QC- Sample ID: 391751-006 S

Batch #: 1 Matrix: Soil

Date Analyzed: 09/30/2010

Date Prepared: 09/30/2010

Analyst: BRB

Reporting Units: mg/kg

| MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
|--|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| BTEX by EPA 8021<br>Analytes                         | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
| Benzene  | ND                                | 0.1148                | 0.0014                         | 1                             | 0.1148                | 0.0967                                   | 84                          | 194      | 70-130                  | 35                        | XF   |
| Toluene  | ND                                | 0.1148                | 0.0014                         | 1                             | 0.1148                | 0.0833                                   | 73                          | 193      | 70-130                  | 35                        | XF   |
| Ethylbenzene   | ND                                | 0.1148                | 0.0011                         | 1                             | 0.1148                | 0.0681                                   | 59                          | 194      | 71-129                  | 35                        | XF   |
| m,p-Xylenes  | ND                                | 0.2296                | 0.0020                         | 1                             | 0.2296                | 0.1308                                   | 57                          | 194      | 70-135                  | 35                        | XF   |
| o-Xylene   | ND                                | 0.1148                | 0.0011                         | 1                             | 0.1148                | 0.0683                                   | 59                          | 194      | 71-133                  | 35                        | XF   |

Lab Batch ID: 824911

QC- Sample ID: 391387-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 09/27/2010

Date Prepared: 09/27/2010

Analyst: BEV

Reporting Units: mg/kg

| MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
|--|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| TPH by SW8015 Mod<br>Analytes                        | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
| C6-C12 Gasoline Range Hydrocarbons                   | ND                                | 1090                  | 1160                           | 106                           | 1090                  | 1160                                     | 106                         | 0        | 70-135                  | 35                        |      |
| C12-C28 Diesel Range Hydrocarbons                    | ND                                | 1090                  | 905                            | 83                            | 1090                  | 925                                      | 85                          | 2        | 70-135                  | 35                        |      |

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

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

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



## Sample Duplicate Recovery



**Project Name: 14" Vac to Jal Legacy**

**Work Order #: 391429**

**Lab Batch #: 824908**

**Project ID: SRS # 2009-92**

**Date Analyzed: 09/28/2010**

**Date Prepared: 09/28/2010**

**Analyst: JLG**

**QC- Sample ID: 391388-002 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 21.4                     | 22.2                        | 4   | 20                  |      |

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

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

BRL - Below Reporting Limit

## Environmental Lab of Texas

12600 West I-20 East  
Odessa, Texas 79765

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

**Project Manager:** Camille Bryant

**Project Name: 14" Vac to Jal Legacy**

**Company Name** **Basin Environmental Consulting, LLC**

Project #: SRS# 2009-92

**Company Address: P.O. Box 381**

**Project Loc:** Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: PAA-J. Nappu

Telephone No: (575) 605-7210

Fax No. (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature**

e-mail: [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]



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

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

### Prelogin / Nonconformance Report - Sample Log-In

Client: Basin Env. / Plains  
Date/Time: 9.27.10 15:22  
Lab ID #: 391429  
Initiate: AE

#### Sample Receipt Checklist

|   |              |              |              |              |
|---|--------------|--------------|--------------|--------------|
| 1. Samples on ice?  | Blue         | Water        | No           |              |
| 2. Shipping container in good condition?                            | Yes          | No           | None         |              |
| 3. Custody seals intact on shipping container (cooler) and bottles? | Yes          | No           | N/A          |              |
| 4. Chain of Custody present?  | Yes          | No           |              |              |
| 5. Sample instructions complete on chain of custody?                | Yes          | No           |              |              |
| 6. Any missing / extra samples?                                     | Yes          | No           |              |              |
| 7. Chain of custody signed when relinquished / received?            | Yes          | No           |              |              |
| 8. Chain of custody agrees with sample label(s)?                    | Yes          | No           |              |              |
| 9. Container labels legible and intact?                             | Yes          | No           |              |              |
| 10. Sample matrix / properties agree with chain of custody?         | Yes          | No           |              |              |
| 11. Samples in proper container / bottle?                           | Yes          | No           |              |              |
| 12. Samples properly preserved?                                     | Yes          | No           | N/A          |              |
| 13. Sample container intact?  | Yes          | No           |              |              |
| 14. Sufficient sample amount for indicated test(s)?                 | Yes          | No           |              |              |
| 15. All samples received within sufficient hold time?               | Yes          | No           |              |              |
| 16. Subcontract of sample(s)?                                       | Yes          | No           | N/A          |              |
| 17. VOC sample have zero head space?                                | Yes          | No           | N/A          |              |
| 18. Cooler 1 No.  | Cooler 2 No. | Cooler 3 No. | Cooler 4 No. | Cooler 5 No. |
| lbs 4.1 °C  | lbs °C       | lbs °C       | lbs °C       | lbs °C       |

#### Nonconformance Documentation

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

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

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

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



**Analytical Report 392369**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14" Vac to Jal Legacy**

**SRS # 2009-92**

**13-OCT-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

**Xenco-Houston (EPA Lab code: TX00122):**

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

**Xenco-Atlanta (EPA Lab Code: GA00046):**

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

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

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

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

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

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

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**  
**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)**

**Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)**



13-OCT-10

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

Reference: XENCO Report No: **392369**  
**14" Vac to Jal Legacy**  
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 392369. 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. 392369 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 392369



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

| Sample Id        | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|------------------|--------|-----------------|--------------|---------------|
| Screened SP # 25 | S      | Sep-30-10 13:00 |              | 392369-001    |
| Screened SP # 26 | S      | Sep-30-10 13:20 |              | 392369-002    |
| Screened SP # 27 | S      | Oct-01-10 13:30 |              | 392369-003    |
| Screened SP # 28 | S      | Oct-01-10 13:50 |              | 392369-004    |



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: 14" Vac to Jal Legacy*



*Project ID: SRS # 2009-92*

*Work Order Number: 392369*

*Report Date: 13-OCT-10*

*Date Received: 10/04/2010*

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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-826738 BTEX by EPA 8021

SW8021BM

Batch 826738, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 575584-1-BLK.



# Certificate of Analysis Summary 392369

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy



Project Id: SRS # 2009-92

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Mon Oct-04-10 03:09 pm


Report Date: 13-OCT-10

Project Manager: Brent Barron, II

| <i>Analysis Requested</i>          | <i>Lab Id:</i>    | 392369-001       | 392369-002       | 392369-003       | 392369-004       |  |  |
|------------------------------------|-------------------|------------------|------------------|------------------|------------------|--|--|
|                                    | <i>Field Id:</i>  | Screened SP # 25 | Screened SP # 26 | Screened SP # 27 | Screened SP # 28 |  |  |
|                                    | <i>Depth:</i>     |                  |                  |                  |                  |  |  |
|                                    | <i>Matrix:</i>    | SOIL             | SOIL             | SOIL             | SOIL             |  |  |
|                                    | <i>Sampled:</i>   | Sep-30-10 13:00  | Sep-30-10 13:20  | Oct-01-10 13:30  | Oct-01-10 13:50  |  |  |
| <b>BTEX by EPA 8021</b>            | <i>Extracted:</i> | Oct-08-10 18:00  | Oct-08-10 18:00  | Oct-08-10 18:00  | Oct-08-10 18:00  |  |  |
|                                    | <i>Analyzed:</i>  | Oct-09-10 01:44  | Oct-09-10 02:07  | Oct-09-10 02:30  | Oct-09-10 02:54  |  |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         |  |  |
| Benzene                            |                   | ND 0.0539        | ND 0.0542        | ND 0.0533        | ND 0.0534        |  |  |
| Toluene                            |                   | ND 0.1078        | ND 0.1083        | ND 0.1066        | ND 0.1068        |  |  |
| Ethylbenzene                       |                   | 0.0652 0.0539    | ND 0.0542        | ND 0.0533        | ND 0.0534        |  |  |
| m,p-Xylenes                        |                   | 0.1956 0.1078    | 0.1365 0.1083    | 0.1493 0.1066    | 0.1111 0.1068    |  |  |
| o-Xylene                           |                   | 0.0749 0.0539    | ND 0.0542        | 0.0576 0.0533    | ND 0.0534        |  |  |
| Xylenes, Total                     |                   | 0.2705 0.0539    | 0.1365 0.0542    | 0.2069 0.0533    | 0.1111 0.0534    |  |  |
| Total BTEX                         |                   | 0.3357 0.0539    | 0.1365 0.0542    | 0.2069 0.0533    | 0.1111 0.0534    |  |  |
| <b>Percent Moisture</b>            | <i>Extracted:</i> |                  |                  |                  |                  |  |  |
|                                    | <i>Analyzed:</i>  | Oct-07-10 08:30  | Oct-07-10 08:30  | Oct-07-10 08:30  | Oct-07-10 08:30  |  |  |
|                                    | <i>Units/RL:</i>  | % RL             | % RL             | % RL             | % RL             |  |  |
| Percent Moisture                   |                   | 7.22 1.00        | 7.68 1.00        | 6.20 1.00        | 6.38 1.00        |  |  |
| <b>TPH by SW8015 Mod</b>           | <i>Extracted:</i> | Oct-05-10 09:30  | Oct-05-10 09:30  | Oct-05-10 09:30  | Oct-05-10 09:30  |  |  |
|                                    | <i>Analyzed:</i>  | Oct-05-10 12:07  | Oct-05-10 12:26  | Oct-05-10 12:45  | Oct-05-10 13:05  |  |  |
|                                    | <i>Units/RL:</i>  | mg/kg RL         | mg/kg RL         | mg/kg RL         | mg/kg RL         |  |  |
| C6-C12 Gasoline Range Hydrocarbons |                   | 132 16.1         | 104 16.3         | 156 15.9         | 96.4 16.0        |  |  |
| C12-C28 Diesel Range Hydrocarbons  |                   | 1280 16.1        | 1200 16.3        | 1820 15.9        | 1080 16.0        |  |  |
| C28-C35 Oil Range Hydrocarbons     |                   | 35.0 16.1        | 26.3 16.3        | 31.4 15.9        | 27.4 16.0        |  |  |
| Total TPH                          |                   | 1447 16.1        | 1330 16.3        | 2007 15.9        | 1204 16.0        |  |  |

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

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Brent Barron, 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

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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| 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: 14" Vac to Jal Legacy

Work Orders : 392369,

Project ID: SRS # 2009-92

Lab Batch #: 826738

Sample: 575584-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/08/10 18:48

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene          | 0.0302              | 0.0300             | 101                   | 80-120               |       |
| 4-Bromofluorobenzene         | 0.0301              | 0.0300             | 100                   | 80-120               |       |

Lab Batch #: 826738

Sample: 575584-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/08/10 19:11

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene          | 0.0304              | 0.0300             | 101                   | 80-120               |       |
| 4-Bromofluorobenzene         | 0.0303              | 0.0300             | 101                   | 80-120               |       |

Lab Batch #: 826738

Sample: 575584-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/08/10 19:34

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene          | 0.0263              | 0.0300             | 88                    | 80-120               |       |
| 4-Bromofluorobenzene         | 0.0165              | 0.0300             | 55                    | 80-120               | *     |

Lab Batch #: 826738

Sample: 392818-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/08/10 23:49

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene          | 0.0305              | 0.0300             | 102                   | 80-120               |       |
| 4-Bromofluorobenzene         | 0.0325              | 0.0300             | 108                   | 80-120               |       |

Lab Batch #: 826738

Sample: 392818-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/09/10 00:12

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene          | 0.0302              | 0.0300             | 101                   | 80-120               |       |
| 4-Bromofluorobenzene         | 0.0316              | 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: 14" Vac to Jal Legacy

Work Orders : 392369,

Project ID: SRS # 2009-92

Lab Batch #: 826738

Sample: 392369-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/09/10 01:44

### 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 |  | 0.0282           | 0.0300          | 94              | 80-120            |       |

Lab Batch #: 826738

Sample: 392369-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/09/10 02:07

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     |  | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|--|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |  |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  |  | 0.0272           | 0.0300          | 91              | 80-120            |       |
| 4-Bromofluorobenzene |  | 0.0281           | 0.0300          | 94              | 80-120            |       |

Lab Batch #: 826738

Sample: 392369-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/09/10 02:30

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     |  | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|--|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |  |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  |  | 0.0273           | 0.0300          | 91              | 80-120            |       |
| 4-Bromofluorobenzene |  | 0.0287           | 0.0300          | 96              | 80-120            |       |

Lab Batch #: 826738

Sample: 392369-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/09/10 02:54

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     |  | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|--|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |  |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  |  | 0.0268           | 0.0300          | 89              | 80-120            |       |
| 4-Bromofluorobenzene |  | 0.0281           | 0.0300          | 94              | 80-120            |       |

Lab Batch #: 826063

Sample: 575177-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/05/10 11:09

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod |  | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------|--|------------------|-----------------|-----------------|-------------------|-------|
| Analytes          |  |                  |                 |                 |                   |       |
| 1-Chlorooctane    |  | 93.8             | 101             | 93              | 70-135            |       |
| o-Terphenyl       |  | 53.5             | 50.3            | 106             | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 392369,

Project ID: SRS # 2009-92

Lab Batch #: 826063

Sample: 575177-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/05/10 11:29

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 94.0                | 99.9               | 94                    | 70-135               |       |
| o-Terphenyl                   | 58.5                | 50.0               | 117                   | 70-135               |       |

Lab Batch #: 826063

Sample: 575177-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 10/05/10 11:48

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 94.2                | 99.5               | 95                    | 70-135               |       |
| o-Terphenyl                   | 51.5                | 49.8               | 103                   | 70-135               |       |

Lab Batch #: 826063

Sample: 392369-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/05/10 12:07

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 102                 | 99.7               | 102                   | 70-135               |       |
| o-Terphenyl                   | 60.4                | 49.9               | 121                   | 70-135               |       |

Lab Batch #: 826063

Sample: 392369-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/05/10 12:26

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 98.1                | 100                | 98                    | 70-135               |       |
| o-Terphenyl                   | 57.1                | 50.2               | 114                   | 70-135               |       |

Lab Batch #: 826063

Sample: 392369-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/05/10 12:45

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1-Chlorooctane                | 96.9                | 99.5               | 97                    | 70-135               |       |
| o-Terphenyl                   | 59.3                | 49.8               | 119                   | 70-135               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 392369,

Project ID: SRS # 2009-92

Lab Batch #: 826063

Sample: 392369-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 10/05/10 13:05

### SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod<br><br>Analytes | Amount<br>Found<br>[A] | True<br>Amount<br>[B] | Recovery<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|-----------------------------------|------------------------|-----------------------|-----------------------|-------------------------|-------|
| 1-Chlorooctane                    | 100                    | 100                   | 100                   | 70-135                  |       |
| o-Terphenyl                       | 57.9                   | 50.0                  | 116                   | 70-135                  |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# BS / BSL Recoveries



**Project Name: 14" Vac to Jal Legacy**

**Work Order #: 392369**

**Analyst: BRB**

**Date Prepared: 10/08/2010**

**Project ID: SRS # 2009-92**

**Date Analyzed: 10/08/2010**

**Lab Batch ID: 826738**

**Sample: 575584-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| <b>BTEX by EPA 8021</b> | <b>Blank Sample Result [A]</b> | <b>Spike Added [B]</b> | <b>Blank Spike Result [C]</b> | <b>Blank Spike %R [D]</b> | <b>Spike Added [E]</b> | <b>Blank Spike Duplicate Result [F]</b> | <b>Blk. Spk Dup. %R [G]</b> | <b>RPD %</b> | <b>Control Limits %R</b> | <b>Control Limits %RPD</b> | <b>Flag</b> |
|-------------------------|--------------------------------|------------------------|-------------------------------|---------------------------|------------------------|---|-----------------------------|--------------|--------------------------|----------------------------|-------------|
| <b>Analytes</b>         |                                |                        |                               |                           |                        |   |                             |              |                          |                            |             |
| Benzene                 | ND                             | 0.1000                 | 0.1159                        | 116                       | 0.1                    | 0.1122                                  | 112                         | 3            | 70-130                   | 35                         |             |
| Toluene                 | ND                             | 0.1000                 | 0.1178                        | 118                       | 0.1                    | 0.1139                                  | 114                         | 3            | 70-130                   | 35                         |             |
| Ethylbenzene            | ND                             | 0.1000                 | 0.1176                        | 118                       | 0.1                    | 0.1137                                  | 114                         | 3            | 71-129                   | 35                         |             |
| m,p-Xylenes             | ND                             | 0.2000                 | 0.2406                        | 120                       | 0.2                    | 0.2328                                  | 116                         | 3            | 70-135                   | 35                         |             |
| o-Xylene                | ND                             | 0.1000                 | 0.1151                        | 115                       | 0.1                    | 0.1127                                  | 113                         | 2            | 71-133                   | 35                         |             |

**Analyst: BEV**

**Date Prepared: 10/05/2010**

**Date Analyzed: 10/05/2010**

**Lab Batch ID: 826063**

**Sample: 575177-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

| <b>TPH by SW8015 Mod</b>           | <b>Blank Sample Result [A]</b> | <b>Spike Added [B]</b> | <b>Blank Spike Result [C]</b> | <b>Blank Spike %R [D]</b> | <b>Spike Added [E]</b> | <b>Blank Spike Duplicate Result [F]</b> | <b>Blk. Spk Dup. %R [G]</b> | <b>RPD %</b> | <b>Control Limits %R</b> | <b>Control Limits %RPD</b> | <b>Flag</b> |
|------------------------------------|--------------------------------|------------------------|-------------------------------|---------------------------|------------------------|---|-----------------------------|--------------|--------------------------|----------------------------|-------------|
| <b>Analytes</b>                    |                                |                        |                               |                           |                        |   |                             |              |                          |                            |             |
| C6-C12 Gasoline Range Hydrocarbons | ND                             | 1010                   | 1010                          | 100                       | 999                    | 1010                                    | 101                         | 0            | 70-135                   | 35                         |             |
| C12-C28 Diesel Range Hydrocarbons  | ND                             | 1010                   | 936                           | 93                        | 999                    | 980                                     | 98                          | 5            | 70-135                   | 35                         |             |

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS / MSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 392369

Project ID: SRS # 2009-92

Lab Batch ID: 826738

QC- Sample ID: 392818-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/08/2010

Date Prepared: 10/08/2010

Analyst: BRB

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
|                              |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
| Benzene                      | ND                                | 0.1063                | 0.1027                         | 97                            | 0.1063                | 0.1013                                   | 95                          | 1        | 70-130                  | 35                        |      |
| Toluene                      | ND                                | 0.1063                | 0.1027                         | 97                            | 0.1063                | 0.1008                                   | 95                          | 2        | 70-130                  | 35                        |      |
| Ethylbenzene                 | ND                                | 0.1063                | 0.1011                         | 95                            | 0.1063                | 0.0996                                   | 94                          | 1        | 71-129                  | 35                        |      |
| m,p-Xylenes                  | ND                                | 0.2125                | 0.2088                         | 98                            | 0.2125                | 0.2048                                   | 96                          | 2        | 70-135                  | 35                        |      |
| o-Xylene                     | ND                                | 0.1063                | 0.1037                         | 98                            | 0.1063                | 0.1018                                   | 96                          | 2        | 71-133                  | 35                        |      |

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

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

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



## Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 392369

Lab Batch #: 826348

Date Analyzed: 10/07/2010

QC- Sample ID: 392371-001 D

Reporting Units: %

Date Prepared: 10/07/2010

Batch #: 1

Project ID: SRS # 2009-92

Analyst: JLG

Matrix: Soil

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Percent Moisture                   | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Percent Moisture                   | 6.99                     | 6.48                        | 8   | 20                  |      |

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

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

BRL - Below Reporting Limit

# Environmental Lab of Texas

## 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: Camille Bryant

Project Name: 14" Vac to Jet Legacy

Company Name: Basin Environmental Consulting, LLC

Project #: SRS# 2009-92

Company Address: P.O. Box 381

Project Loc: Lee County, NM

City/State/Zip: Lawington, NM 88260

PO #: PAA-J. Henry

Telephone No: (505) 605-7210

Fax No: (505) 396-1429

Report Format ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Camille Bryant

e-mail: cjbryant@basin-consulting.com

(lab use only)

ORDER #: 392369

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Special Instructions:  
Hold for BTEX analysis

| Relinquished by | Date    | Time  | Received by | Date    | Time  | Relinquished by | Date    | Time  | Received by | Date    | Time  | Relinquished by | Date | Time | Received by | Date | Time |
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| Camille Bryant  | 10/4/10 | 11:30 | Sara Lopez  | 10/4/10 | 11:30 | Sara Lopez      | 10/4/10 | 15:09 | Elmer Rf    | 10/4/10 | 15:09 |                 |      |      |             |      |      |

Laboratory Comments:  
VOCs Free of Headspace? ☒ N  
Custody seals on container(s) ☒ N  
Sample Hand Delivered ☒ N  
by Counter ☒ N  
by Courier ☒ N  
Temperature Upon Receipt: 4.1 °C



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

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

### Prelogin / Nonconformance Report - Sample Log-In

Client: Plains  
Date/Time: 10/4/10 15:09  
Lab ID #: 392369  
Initials: AS

#### Sample Receipt Checklist

|   |              |              |              |              |
|---|--------------|--------------|--------------|--------------|
| 1. Samples on ice?  | Blue         | Water        | No           |              |
| 2. Shipping container in good condition?                            | Yes          | No           | None         |              |
| 3. Custody seals intact on shipping container (cooler) and bottles? | Yes          | No           | N/A          |              |
| 4. Chain of Custody present?  | Yes          | No           |              |              |
| 5. Sample instructions complete on chain of custody?                | Yes          | No           |              |              |
| 6. Any missing / extra samples?                                     | Yes          | No           |              |              |
| 7. Chain of custody signed when relinquished / received?            | Yes          | No           |              |              |
| 8. Chain of custody agrees with sample label(s)?                    | Yes          | No           |              |              |
| 9. Container labels legible and intact?                             | Yes          | No           |              |              |
| 10. Sample matrix / properties agree with chain of custody?         | Yes          | No           |              |              |
| 11. Samples in proper container / bottle?                           | Yes          | No           |              |              |
| 12. Samples properly preserved?                                     | Yes          | No           | N/A          |              |
| 13. Sample container intact?  | Yes          | No           |              |              |
| 14. Sufficient sample amount for indicated test(s)?                 | Yes          | No           |              |              |
| 15. All samples received within sufficient hold time?               | Yes          | No           |              |              |
| 16. Subcontract of sample(s)?                                       | Yes          | No           | N/A          |              |
| 17. VOC sample have zero head space?                                | Yes          | No           | N/A          |              |
| 18. Cooler 1 No.  | Cooler 2 No. | Cooler 3 No. | Cooler 4 No. | Cooler 5 No. |
| lbs 4.1 °C  | lbs °C       | lbs °C       | lbs °C       | lbs °C       |

#### Nonconformance Documentation

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

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

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

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.6.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis

**Analytical Report 337179**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14" Vac to Jal Legacy**

**2009-092**

**14-JUL-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-Miramar (EPA Lab code: FL01246): Florida (E86349)

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

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

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

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14-JUL-09

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

Reference: XENCO Report No: **337179**  
**14" Vac to Jal Legacy**  
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 337179. 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. 337179 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 337179**



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

14" Vac to Jal Legacy

| Sample Id      | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|----------------|--------|-----------------|--------------|---------------|
| SB-2 Prelim GW | W      | Jul-02-09 07:30 |              | 337179-001    |
| SB-3 Prelim GW | W      | Jul-02-09 13:00 |              | 337179-002    |



## CASE NARRATIVE

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

**Project Name:** 14" Vac to Jal Legacy

**Project ID:** 2009-092

**Work Order Number:** 337179

**Report Date:** 14-JUL-09

**Date Received:** 07/06/2009

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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-764628 Inorganic Anions by EPA 300

None

Batch: LBA-764871 TDS by SM2540C

None

Batch: LBA-765343 BTEX-MTBE EPA 8021B

SW8021BM

Batch 765343, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 533575-1-BLK, 337179-002.

1,4-Difluorobenzene recovered above QC limits. Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 336977-006 S, 336977-006 SD.

SW8021BM

Batch 765343, Toluene, o-Xylene recovered below QC limits in the Matrix Spike.

Samples affected are: 337179-002, -001.

The Laboratory Control Sample for Toluene, o-Xylene is within laboratory Control Limits



**Certificate of Analysis Summary 337179**  
**PLAINS ALL AMERICAN EH&S, Midland, TX**



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: 14" Vac to Jal Legacy

Date Received in Lab: Mon Jul-06-09 12:35 pm


Report Date: 14-JUL-09

Project Manager: Brent Barron, II

|                           |                   |                 |                 |  |  |  |  |
|---------------------------|-------------------|-----------------|-----------------|--|--|--|--|
| <b>Analysis Requested</b> | <b>Lab Id:</b>    | 337179-001      | 337179-002      |  |  |  |  |
|                           | <b>Field Id:</b>  | SB-2 Prelim GW  | SB-3 Prelim GW  |  |  |  |  |
|                           | <b>Depth:</b>     |                 |                 |  |  |  |  |
|                           | <b>Matrix:</b>    | WATER           | WATER           |  |  |  |  |
|                           | <b>Sampled:</b>   | Jul-02-09 07:30 | Jul-02-09 13:00 |  |  |  |  |
| <b>Anions by EPA 300</b>  | <b>Extracted:</b> |                 |                 |  |  |  |  |
|                           | <b>Analyzed:</b>  | Jul-06-09 14:02 | Jul-06-09 14:02 |  |  |  |  |
|                           | <b>Units/RL:</b>  | mg/L RL         | mg/L RL         |  |  |  |  |
| Chloride                  |                   | 10200 500       | 10500 500       |  |  |  |  |
| <b>BTEX by EPA 8021B</b>  | <b>Extracted:</b> | Jul-11-09 11:00 | Jul-11-09 11:00 |  |  |  |  |
|                           | <b>Analyzed:</b>  | Jul-13-09 14:25 | Jul-13-09 14:43 |  |  |  |  |
|                           | <b>Units/RL:</b>  | mg/L RL         | mg/L RL         |  |  |  |  |
|                           |                   | 0.0063 0.0010   | ND 0.0010       |  |  |  |  |
| Benzene                   |                   | 0.0158 0.0020   | ND 0.0020       |  |  |  |  |
| Toluene                   |                   | 0.0054 0.0010   | ND 0.0010       |  |  |  |  |
| Ethylbenzene              |                   | 0.0070 0.0020   | ND 0.0020       |  |  |  |  |
| m,p-Xylenes               |                   | 0.0037 0.0010   | ND 0.0010       |  |  |  |  |
| o-Xylene                  |                   | 0.0107 0.0010   | ND 0.0010       |  |  |  |  |
| Total Xylenes             |                   | 0.0382 0.0010   | ND 0.0010       |  |  |  |  |
| Total BTEX                |                   |                 |                 |  |  |  |  |
| <b>TDS by SM2540C</b>     | <b>Extracted:</b> |                 |                 |  |  |  |  |
|                           | <b>Analyzed:</b>  | Jul-07-09 15:22 | Jul-07-09 15:22 |  |  |  |  |
|                           | <b>Units/RL:</b>  | mg/L RL         | mg/L RL         |  |  |  |  |
| Total dissolved solids    |                   | 19700 5.00      | 20500 5.00      |  |  |  |  |

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

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Brent Barron  
Odessa Laboratory Director

- 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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| 842 Cantwell Lane, Corpus Christi, TX 78408 | (361) 884-0371 | (361) 884-9116 |

## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 337179,

Lab Batch #: 765343

Sample: 533575-1-BKS / BKS

Project ID: 2009-092

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/13/09 12:34

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0315           | 0.0300          | 105             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0351           | 0.0300          | 117             | 80-120            |       |

Lab Batch #: 765343

Sample: 533575-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/13/09 12:53

### 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 | 0.0356           | 0.0300          | 119             | 80-120            |       |

Lab Batch #: 765343

Sample: 533575-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/13/09 13:30

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0275           | 0.0300          | 92              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0192           | 0.0300          | 64              | 80-120            | *     |

Lab Batch #: 765343

Sample: 337179-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/13/09 14:25

### 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 | 0.0273           | 0.0300          | 91              | 80-120            |       |

Lab Batch #: 765343

Sample: 337179-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/13/09 14:43

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B    | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0275           | 0.0300          | 92              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0229           | 0.0300          | 76              | 80-120            | *     |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 337179,

Project ID: 2009-092

Lab Batch #: 765343

Sample: 336977-006 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/13/09 20:36

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount<br>Found<br>[A] | True<br>Amount<br>[B] | Recovery<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|-------------------------------|------------------------|-----------------------|-----------------------|-------------------------|-------|
| 1,4-Difluorobenzene           | 0.0472                 | 0.0300                | 157                   | 80-120                  | *     |
| 4-Bromofluorobenzene          | 0.0309                 | 0.0300                | 103                   | 80-120                  |       |

Lab Batch #: 765343

Sample: 336977-006 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/13/09 20:55

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount<br>Found<br>[A] | True<br>Amount<br>[B] | Recovery<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|-------------------------------|------------------------|-----------------------|-----------------------|-------------------------|-------|
| 1,4-Difluorobenzene           | 0.0485                 | 0.0300                | 162                   | 80-120                  | *     |
| 4-Bromofluorobenzene          | 0.0331                 | 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] =  $100 * A / B$

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



## Blank Spike Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 337179

Project ID:

2009-092

Lab Batch #: 764628

Sample: 764628-1-BKS

Matrix: Water

Date Analyzed: 07/06/2009

Date Prepared: 07/06/2009

Analyst: LATCOR

Reporting Units: mg/L

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

| Anions by EPA 300<br>Analytes | Blank<br>Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|-------------------------------|------------------------|-----------------------|---------------------------------|-----------------------------|-------------------------|-------|
| Chloride                      | ND                     | 10.0                  | 9.22                            | 92                          | 90-110                  |       |

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

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

- Below Reporting Limit





## BS / BSD Recoveries



**Project Name: 14" Vac to Jal Legacy**

**Work Order #: 337179**

**Analyst: ASA**

**Date Prepared: 07/11/2009**

**Project ID: 2009-092**

**Date Analyzed: 07/13/2009**

**Lab Batch ID: 765343**

**Sample: 533575-1-BKS**

**Batch #: 1**

**Matrix: Water**

**Units: mg/L**

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

| <b>BTEX by EPA 8021B</b> | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|--------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>          |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| Benzene                  | ND                                     | 0.1000                         | 0.0845                                    | 85                                    | 0.1                            | 0.0908  | 91                                      | 7                | 70-125                           | 25                                 |             |
| Toluene                  | ND                                     | 0.1000                         | 0.0799                                    | 80                                    | 0.1                            | 0.0861  | 86                                      | 7                | 70-125                           | 25                                 |             |
| Ethylbenzene             | ND                                     | 0.1000                         | 0.0890                                    | 89                                    | 0.1                            | 0.0961  | 96                                      | 8                | 71-129                           | 25                                 |             |
| m,p-Xylenes              | ND                                     | 0.2000                         | 0.1780                                    | 89                                    | 0.2                            | 0.1937  | 97                                      | 8                | 70-131                           | 25                                 |             |
| o-Xylene                 | ND                                     | 0.1000                         | 0.0847                                    | 85                                    | 0.1                            | 0.0914  | 91                                      | 8                | 71-133                           | 25                                 |             |

**Analyst: WRU**

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

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

**Lab Batch ID: 764871**

**Sample: 764871-1-BKS**

**Batch #: 1**

**Matrix: Water**

**Units: mg/L**

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

| <b>TDS by SM2540C</b>  | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>        |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| Total dissolved solids | ND                                     | 1000                           | 904                                       | 90                                    | 1000                           | 942   | 94                                      | 4                | 80-120                           | 30                                 |             |

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 337179

Lab Batch #: 764628

Date Analyzed: 07/06/2009

QC- Sample ID: 337000-001 S

Reporting Units: mg/L

Date Prepared: 07/06/2009

Project ID: 2009-092

Analyst: LATCOR

Batch #: 1

Matrix: Water

| 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 |
| Chloride                    |  | 495                                  | 250             | 739                      | 98     | 80-120            |

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$   
Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$   
All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit



## Form 3 - MS / MSD Recoveries

Project Name: 14" Vac to Jal Legacy



Work Order #: 337179

Project ID: 2009-092

Lab Batch ID: 765343

QC- Sample ID: 336977-006 S

Batch #: 1 Matrix: Water

Date Analyzed: 07/13/2009

Date Prepared: 07/11/2009

Analyst: ASA

Reporting Units: mg/L

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|-------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
|                               |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
| Benzene                       | 0.0286                            | 0.1000                | 0.1043                         | 76                            | 0.1000                | 0.1067                                   | 78                          | 2        | 70-125                  | 25                        |      |
| Toluene                       | ND                                | 0.1000                | 0.0679                         | 68                            | 0.1000                | 0.0698                                   | 70                          | 3        | 70-125                  | 25                        | X    |
| Ethylbenzene                  | 0.0030                            | 0.1000                | 0.0759                         | 73                            | 0.1000                | 0.0791                                   | 76                          | 4        | 71-129                  | 25                        |      |
| m,p-Xylenes                   | ND                                | 0.2000                | 0.1494                         | 75                            | 0.2000                | 0.1540                                   | 77                          | 3        | 70-131                  | 25                        |      |
| o-Xylene                      | ND                                | 0.1000                | 0.0704                         | 70                            | 0.1000                | 0.0728                                   | 73                          | 3        | 71-133                  | 25                        | X    |

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

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

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



## Sample Duplicate Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 337179

Lab Batch #: 764628

Date Analyzed: 07/06/2009

QC- Sample ID: 337000-001 D

Reporting Units: mg/L

Project ID: 2009-092

Analyst: LATCOR

Batch #: 1

Matrix: Water

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Anions by EPA 300                  | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Chloride                           | 495                      | 487                         | 2   | 20                  |      |

Lab Batch #: 764871

Date Analyzed: 07/07/2009

QC- Sample ID: 337179-001 D

Reporting Units: mg/L

Date Prepared: 07/07/2009

Analyst: WRU

Batch #: 1

Matrix: Water

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| TDS by SM2540C                     | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Total dissolved solids             | 19700                    | 19800                       | 1   | 30                  |      |

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

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

BRL - Below Reporting Limit

## Environmental Lab of Texas

**CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST**

12609 West I-20 East Phone: 432-563-1800  
Odessa, Texas 79765 Fax: 432-563-1713

Project Manager: Camille Bryant

Company Name Basin Environmental Consulting, LLC

Company Address P. O. Box 381

City/State/Zip: Lovington, NM 82250

Telephone No: (575) 605-7210 Fax No: (575) 396-1429

Sampler Signature: Camille Bryant e-mail: cjbryant@basin-consulting.com

Project Name: 14" Vac to Jal Legacy

Project #: 2009-092

Project Loc: Lea County, NM

PO #: FAA - Jason Henry

Report Format. ☒ Standard ☐ TRRP ☐ NPDES

[illegible]

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

Client: Basin Env. / Plains  
Date/ Time: 7-10-09 12:35  
Lab ID #: 337179  
Initials: AL

**Sample Receipt Checklist**

|     |  |   |                             | Client Initials          |
|-----|--|---|-----------------------------|--------------------------|
| #1  | Temperature of container/ cooler?                      | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | 4.1 °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 337272**

**for**

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

**Project Manager: Jason Henry**

**14" Vac to Jal - Legacy**

**2009-092**

**14-JUL-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-Miramar (EPA Lab code: FL01246): Florida (E86349)

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)

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14-JUL-09

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

Reference: XENCO Report No: **337272**  
**14" Vac to Jal - Legacy**  
Project Address: Lea Co., 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 337272. 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. 337272 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 337272



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal - Legacy

| Sample Id | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|-----------|--------|-----------------|--------------|---------------|
| MW-1      | W      | Jul-06-09 10:45 |              | 337272-001    |



## CASE NARRATIVE

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

**Project Name:** 14" Vac to Jal - Legacy

**Project ID:** 2009-092

**Work Order Number:** 337272

**Report Date:** 14-JUL-09

**Date Received:** 07/07/2009

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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-764860 Inorganic Anions by EPA 300

None

Batch: LBA-764871 TDS by SM2540C

None

Batch: LBA-765196 BTEX-MTBE EPA 8021B

SW8021BM

Batch 765196, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 337272-001.

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

SW8021BM

Batch 765196, 1,4-Difluorobenzene recovered below QC limits. Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 337033-002 S, 337033-002 SD.

4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 533485-1-BLK, 337033-002 S, 337033-002 SD, 337272-001.

4-Bromofluorobenzene recovered above QC limits Data not confirmed by re-analysis. Samples affected are: 533485-1-BKS, 533485-1-BSD.



# Certificate of Analysis Summary 337272

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal - Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea Co., NM

Date Received in Lab: Tue Jul-07-09 10:15 am


Report Date: 14-JUL-09

Project Manager: Brent Barron, II

|                           |  |  |  |  |  |  |
|---------------------------|--|--|--|--|--|--|
| <b>Analysis Requested</b> | <b>Lab Id:</b> 337272-001<br><b>Field Id:</b> MW-1<br><b>Depth:</b><br><b>Matrix:</b> WATER<br><b>Sampled:</b> Jul-06-09 10:45 |  |  |  |  |  |
| <b>Anions by EPA 300</b>  | <b>Extracted:</b><br><b>Analyzed:</b> Jul-08-09 17:29<br><b>Units/RL:</b> mg/L RL  |  |  |  |  |  |
| Chloride                  | 5300 250   |  |  |  |  |  |
| <b>BTEX by EPA 8021B</b>  | <b>Extracted:</b> Jul-08-09 18:00<br><b>Analyzed:</b> Jul-11-09 17:06<br><b>Units/RL:</b> mg/L RL                              |  |  |  |  |  |
| Benzene                   | ND 0.0010  |  |  |  |  |  |
| Toluene                   | ND 0.0020  |  |  |  |  |  |
| Ethylbenzene              | ND 0.0010  |  |  |  |  |  |
| m,p-Xylenes               | ND 0.0020  |  |  |  |  |  |
| o-Xylene                  | ND 0.0010  |  |  |  |  |  |
| Total Xylenes             | ND 0.0010  |  |  |  |  |  |
| Total BTEX                | ND 0.0010  |  |  |  |  |  |
| <b>TDS by SM2540C</b>     | <b>Extracted:</b><br><b>Analyzed:</b> Jul-07-09 15:22<br><b>Units/RL:</b> mg/L RL  |  |  |  |  |  |
| Total dissolved solids    | 14300 5.00   |  |  |  |  |  |

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

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Brent Barron  
Odessa Laboratory Director

- 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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|---|----------------|----------------|
| 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: 14" Vac to Jal - Legacy

Work Orders : 337272,

Project ID: 2009-092

Lab Batch #: 765196

Sample: 533485-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/11/09 10:38

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0314              | 0.0300             | 105                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0366              | 0.0300             | 122                   | 80-120               | *     |

Lab Batch #: 765196

Sample: 533485-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/11/09 11:00

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0312              | 0.0300             | 104                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0372              | 0.0300             | 124                   | 80-120               | *     |

Lab Batch #: 765196

Sample: 533485-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/11/09 11:43

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0273              | 0.0300             | 91                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0167              | 0.0300             | 56                    | 80-120               | *     |

Lab Batch #: 765196

Sample: 337272-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/11/09 17:06

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0266              | 0.0300             | 89                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0189              | 0.0300             | 63                    | 80-120               | *     |

Lab Batch #: 765196

Sample: 337033-002 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/12/09 07:40

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | <0.0000             | 0.0300             | 0                     | 80-120               | *     |
| 4-Bromofluorobenzene          | <0.0000             | 0.0300             | 0                     | 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: 14" Vac to Jal - Legacy

Work Orders : 337272,

Project ID: 2009-092

Lab Batch #: 765196

Sample: 337033-002 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 07/12/09 08:02

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br><br>Analytes | Amount<br>Found<br>[A] | True<br>Amount<br>[B] | Recovery<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|-----------------------------------|------------------------|-----------------------|-----------------------|-------------------------|-------|
|                                   |                        |                       |                       |                         |       |
| 1,4-Difluorobenzene               | <0.0000                | 0.0300                | 0                     | 80-120                  | *     |
| 4-Bromofluorobenzene              | <0.0000                | 0.0300                | 0                     | 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.



## Blank Spike Recovery



Project Name: 14" Vac to Jal - Legacy

Work Order #: 337272

Project ID:

2009-092

Lab Batch #: 764860

Sample: 764860-1-BKS

Matrix: Water

Date Analyzed: 07/08/2009

Date Prepared: 07/08/2009

Analyst: LATCOR

Reporting Units: mg/L

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

| Anions by EPA 300<br>Analytes | Blank<br>Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|-------------------------------|------------------------|-----------------------|---------------------------------|-----------------------------|-------------------------|-------|
| Chloride                      | ND                     | 10.0                  | 9.03                            | 90                          | 90-110                  |       |

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

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

ND - Below Reporting Limit



## BS / BSD Recoveries



**Project Name: 14" Vac to Jal - Legacy**

**Work Order #: 337272**

**Analyst: BRB**

**Date Prepared: 07/08/2009**

**Project ID: 2009-092**

**Date Analyzed: 07/11/2009**

**Lab Batch ID: 765196**

**Sample: 533485-1-BKS**

**Batch #: 1**

**Matrix: Water**

**Units: mg/L**

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

| <b>BTEX by EPA 8021B</b> | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|--------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>          |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| Benzene                  | ND                                     | 0.1000                         | 0.0924                                    | 92                                    | 0.1                            | 0.0933  | 93                                      | 1                | 70-125                           | 25                                 |             |
| Toluene                  | ND                                     | 0.1000                         | 0.0872                                    | 87                                    | 0.1                            | 0.0883  | 88                                      | 1                | 70-125                           | 25                                 |             |
| Ethylbenzene             | ND                                     | 0.1000                         | 0.0961                                    | 96                                    | 0.1                            | 0.0984  | 98                                      | 2                | 71-129                           | 25                                 |             |
| m,p-Xylenes              | ND                                     | 0.2000                         | 0.1950                                    | 98                                    | 0.2                            | 0.1992  | 100                                     | 2                | 70-131                           | 25                                 |             |
| o-Xylene                 | ND                                     | 0.1000                         | 0.0929                                    | 93                                    | 0.1                            | 0.0947  | 95                                      | 2                | 71-133                           | 25                                 |             |

**Analyst: WRU**

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

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

**Lab Batch ID: 764871**

**Sample: 764871-1-BKS**

**Batch #: 1**

**Matrix: Water**

**Units: mg/L**

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

| <b>TDS by SM2540C</b>  | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>        |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| Total dissolved solids | ND                                     | 1000                           | 904                                       | 90                                    | 1000                           | 942   | 94                                      | 4                | 80-120                           | 30                                 |             |

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

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

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

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS Recoveries

Project Name: 14" Vac to Jal - Legacy



Work Order #: 337272

Lab Batch #: 764860

Date Analyzed: 07/08/2009

QC- Sample ID: 337428-001 S

Reporting Units: mg/L

Project ID: 2009-092

Analyst: LATCOR

Date Prepared: 07/08/2009

Batch #: 1

Matrix: Water

| 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 |
| Chloride                    |  | 127                                  | 100             | 241                      | 114    | 80-120            |

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
Relative Percent Difference  $[E] = 200 \times (C-A)/(C+B)$   
All Results are based on MDL and Validated for QC Purposes

- Below Reporting Limit



## Form 3 - MS / MSD Recoveries

Project Name: 14" Vac to Jal - Legacy



Work Order #: 337272

Project ID: 2009-092

Lab Batch ID: 765196

QC- Sample ID: 337033-002 S

Batch #: 1 Matrix: Water

Date Analyzed: 07/12/2009

Date Prepared: 07/08/2009

Analyst: BRB

Reporting Units: mg/L

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|-------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
|                               |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
| Benzene                       | 0.0316                            | 0.1000                | ND                             | 0                             | 0.1000                | ND                                       | 0                           | NC       | 70-125                  | 25                        | X    |
| Toluene                       | 0.0071                            | 0.1000                | ND                             | 0                             | 0.1000                | ND                                       | 0                           | NC       | 70-125                  | 25                        | X    |
| Ethylbenzene                  | 0.0021                            | 0.1000                | ND                             | 0                             | 0.1000                | ND                                       | 0                           | NC       | 71-129                  | 25                        | X    |
| m,p-Xylenes                   | 0.0080                            | 0.2000                | ND                             | 0                             | 0.2000                | ND                                       | 0                           | NC       | 70-131                  | 25                        | X    |
| o-Xylene                      | 0.0041                            | 0.1000                | ND                             | 0                             | 0.1000                | ND                                       | 0                           | NC       | 71-133                  | 25                        | X    |

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

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

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



## Sample Duplicate Recovery



Project Name: 14" Vac to Jal - Legacy

Work Order #: 337272

Lab Batch #: 764860

Date Analyzed: 07/08/2009

QC- Sample ID: 337428-001 D

Reporting Units: mg/L

Project ID: 2009-092

Date Prepared: 07/08/2009

Analyst: LATCOR

Batch #: 1

Matrix: Water

### SAMPLE / SAMPLE DUPLICATE RECOVERY

| Anions by EPA 300 | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
|-------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Analyte           |                          |                             |     |                     |      |
| Chloride          | 127                      | 141                         | 10  | 20                  |      |

Lab Batch #: 764871

Date Analyzed: 07/07/2009

QC- Sample ID: 337179-001 D

Reporting Units: mg/L

Date Prepared: 07/07/2009

Analyst: WRU

Batch #: 1

Matrix: Water

### SAMPLE / SAMPLE DUPLICATE RECOVERY

| TDS by SM2540C         | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
|------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Analyte                |                          |                             |     |                     |      |
| Total dissolved solids | 19700                    | 19800                       | 1   | 30                  |      |

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

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

BRL - Below Reporting Limit

# Xenco Laboratories

The Environmental Lab of Texas

12600 West I-20 East  
Odessa, Texas 79765

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

Project Manager: CAMILLE BRYANT  
Company Name: BASIN ENVIRONMENTAL  
Company Address: 2200 PLAINS HWY  
City/State/Zip: LOUINGTON, NM 88760  
Telephone No: 575-491-2244 Fax No: \_\_\_\_\_  
Sampler Signature: [Signature] CAMILLE BRYANT

Project Name: 14" VACTOAL-LEGACY  
Project #: 2009-092  
Project Loc: LEA CO, NM  
PO #: DAA - J. HENRY  
Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only)

ORDER #: 33772

| LAB # (lab use only) | FIELD CODE | Beginning Depth | Ending Depth | Date Sampled | Time Sampled | Field Filtered | Total # of Containers | TOC | HNO <sub>3</sub> | HCl | H <sub>2</sub> SO <sub>4</sub> | HNO <sub>3</sub> H | H <sub>2</sub> SO <sub>4</sub> H | None | Other (Specify) | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water Sampled | When Drilling Water 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Special Instructions:

Relinquished by: [Signature] Date: 7/6/09 Time: 10:15  
Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Received by: [Signature] Date: 7/6/09 Time: 10:15

Laboratory Comments: 5-40m L. water  
Sample Containers: 10  
VOCs Free of Headspace? Y  
Labels on container(s)? Y  
Custody seals on container(s)? Y  
Custody seals on cooler(s)? Y  
Sample Hand Delivered? Y  
by Carrier/Client Rep? Y  
by Courier? Y UPS Y DHL Y FedEx Y Lone Star Y  
Temperature Upon Receipt: 0.4 °C

72 poly

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

Client: Basin / Plains  
Date/ Time: 07/07/09 10:15  
Lab ID #: 337272  
Initials: QVAA

**Sample Receipt Checklist**

|     |  |   |                             | Client Initials          |
|-----|--|---|-----------------------------|--------------------------|
| #1  | Temperature of container/ cooler?                      | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | 04 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 349366**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14-Inch Vac to Jal - Legacy**

**2009-092**

**23-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)



23-OCT-09

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

Reference: XENCO Report No: **349366**  
**14-Inch Vac to Jal - Legacy**  
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 349366. 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. 349366 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 349366



PLAINS ALL AMERICAN EH&S, Midland, TX

14-Inch Vac to Jal - Legacy

| Sample Id | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|-----------|--------|-----------------|--------------|---------------|
| MW-1      | W      | Oct-21-09 10:30 |              | 349366-001    |





## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: 14-Inch Vac to Jal - Legacy*

*Project ID: 2009-092*

*Work Order Number: 349366*

*Report Date: 23-OCT-09*

*Date Received: 10/22/2009*

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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-778519 BTEX-MTBE EPA 8021B

None



# Certificate of Analysis Summary 349366

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14-Inch Vac to Jal - Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Thu Oct-22-09 08:30 am


Report Date: 23-OCT-09

Project Manager: Brent Barron, II

|                           |  |  |  |  |  |  |
|---------------------------|--|--|--|--|--|--|
| <b>Analysis Requested</b> | <b>Lab Id:</b> 349366-001<br><b>Field Id:</b> MW-1<br><b>Depth:</b><br><b>Matrix:</b> WATER<br><b>Sampled:</b> Oct-21-09 10:30 |  |  |  |  |  |
| <b>BTEX by EPA 8021</b>   | <b>Extracted:</b> Oct-22-09 14:00<br><b>Analyzed:</b> Oct-22-09 14:46<br><b>Units/RL:</b> mg/L RL                              |  |  |  |  |  |
| Benzene                   | 0.0125 0.0010  |  |  |  |  |  |
| Toluene                   | 0.0049 0.0020  |  |  |  |  |  |
| Ethylbenzene              | ND 0.0010  |  |  |  |  |  |
| m,p-Xylenes               | ND 0.0020  |  |  |  |  |  |
| o-Xylene                  | ND 0.0010  |  |  |  |  |  |
| Xylenes, Total            | ND 0.0010  |  |  |  |  |  |
| Total BTEX                | 0.0174 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: 14-Inch Vac to Jal - Legacy

Work Orders : 349366,

Project ID: 2009-092

Lab Batch #: 778519

Sample: 541341-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/22/09 13:21

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0291           | 0.0300          | 97              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0302           | 0.0300          | 101             | 80-120            |       |

Lab Batch #: 778519

Sample: 541341-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/22/09 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  | 0.0291           | 0.0300          | 97              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0302           | 0.0300          | 101             | 80-120            |       |

Lab Batch #: 778519

Sample: 541341-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/22/09 14:25

### 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 | 0.0292           | 0.0300          | 97              | 80-120            |       |

Lab Batch #: 778519

Sample: 349366-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/22/09 14:46

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0265           | 0.0300          | 88              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0302           | 0.0300          | 101             | 80-120            |       |

Lab Batch #: 778519

Sample: 349366-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/22/09 23:34

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0296           | 0.0300          | 99              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0316           | 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] =  $100 \times A / B$

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



## Form 2 - Surrogate Recoveries

Project Name: 14-Inch Vac to Jal - Legacy

Work Orders : 349366,

Project ID: 2009-092

Lab Batch #: 778519

Sample: 349366-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/22/09 23:56

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021<br><br>Analytes | Amount<br>Found<br>[A] | True<br>Amount<br>[B] | Recovery<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|----------------------------------|------------------------|-----------------------|-----------------------|-------------------------|-------|
|                                  |                        |                       |                       |                         |       |
| 1,4-Difluorobenzene              | 0.0293                 | 0.0300                | 98                    | 80-120                  |       |
| 4-Bromofluorobenzene             | 0.0311                 | 0.0300                | 104                   | 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.



## BS / BSD Recoveries



**Project Name: 14-Inch Vac to Jal - Legacy**

**Work Order #: 349366**

**Analyst: ASA**

**Date Prepared: 10/22/2009**

**Project ID: 2009-092**

**Date Analyzed: 10/22/2009**

**Lab Batch ID: 778519**

**Sample: 541341-1-BKS**

**Batch #: 1**

**Matrix: Water**

**Units: mg/L**

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

| <b>BTEX by EPA 8021</b> | <b>Blank<br/>Sample Result<br/>[A]</b> | <b>Spike<br/>Added<br/>[B]</b> | <b>Blank<br/>Spike<br/>Result<br/>[C]</b> | <b>Blank<br/>Spike<br/>%R<br/>[D]</b> | <b>Spike<br/>Added<br/>[E]</b> | <b>Blank<br/>Spike<br/>Duplicate<br/>Result [F]</b> | <b>Blk. Spk<br/>Dup.<br/>%R<br/>[G]</b> | <b>RPD<br/>%</b> | <b>Control<br/>Limits<br/>%R</b> | <b>Control<br/>Limits<br/>%RPD</b> | <b>Flag</b> |
|-------------------------|--|--------------------------------|---|---------------------------------------|--------------------------------|---|---|------------------|----------------------------------|------------------------------------|-------------|
| <b>Analytes</b>         |  |                                |   |                                       |                                |   |   |                  |                                  |                                    |             |
| Benzene                 | ND                                     | 0.1000                         | 0.0952                                    | 95                                    | 0.1                            | 0.0941  | 94                                      | 1                | 70-125                           | 25                                 |             |
| Toluene                 | ND                                     | 0.1000                         | 0.0937                                    | 94                                    | 0.1                            | 0.0925  | 93                                      | 1                | 70-125                           | 25                                 |             |
| Ethylbenzene            | ND                                     | 0.1000                         | 0.0950                                    | 95                                    | 0.1                            | 0.0936  | 94                                      | 1                | 71-129                           | 25                                 |             |
| m,p-Xylenes             | ND                                     | 0.2000                         | 0.2091                                    | 105                                   | 0.2                            | 0.2064  | 103                                     | 1                | 70-131                           | 25                                 |             |
| o-Xylene                | ND                                     | 0.1000                         | 0.1013                                    | 101                                   | 0.1                            | 0.1002  | 100                                     | 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 - MS / MSD Recoveries



Project Name: 14-Inch Vac to Jal - Legacy

Work Order #: 349366

Project ID: 2009-092

Lab Batch ID: 778519

QC- Sample ID: 349366-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 10/22/2009

Date Prepared: 10/22/2009

Analyst: ASA

Reporting Units: mg/L

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| Benzene                      | 0.0125                            | 0.1000                | 0.1029                         | 90                            | 0.1000                | 0.1029                                   | 90                          | 0        | 70-125                  | 25                        |      |
| Toluene                      | 0.0049                            | 0.1000                | 0.0960                         | 91                            | 0.1000                | 0.0940                                   | 89                          | 2        | 70-125                  | 25                        |      |
| Ethylbenzene                 | ND                                | 0.1000                | 0.0875                         | 88                            | 0.1000                | 0.0865                                   | 87                          | 1        | 71-129                  | 25                        |      |
| m,p-Xylenes                  | ND                                | 0.2000                | 0.1941                         | 97                            | 0.2000                | 0.1893                                   | 95                          | 3        | 70-131                  | 25                        |      |
| o-Xylene                     | ND                                | 0.1000                | 0.0934                         | 93                            | 0.1000                | 0.0915                                   | 92                          | 2        | 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  
ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

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

**Project Name: 14-Inch Vac to Jbl - Legacy**

Project #: 2009-092

Project Loc: Lea County, NM

PO #: PAA - J. Henry

Fax No. (505) 398-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature:  C.S. Bryant e-mail: [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]



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

Client: Plains / Basin  
Date/ Time: 10-22-09 00830  
Lab ID #: 349366  
Initials: JMF

**Sample Receipt Checklist**

|   | Yes        | No | Client Initials          |
|---|------------|----|--------------------------|
| #1 Temperature of container/ cooler?                                | <u>Yes</u> | No | 4.1 °C                   |
| #2 Shipping container in good condition?                            | <u>Yes</u> | No | <u>MA</u>                |
| #3 Custody Seals intact on shipping container/ cooler?              | <u>Yes</u> | No | Not Present <u>MA</u>    |
| #4 Custody Seal's intact on sample bottles/ container? <u>label</u> | <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: \_\_\_\_\_

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 356646**

**for**

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

**Project Manager: Jason Henry**

**14" Vac to Jal Legacy**

**2009-092**

**30-DEC-09**



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

Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (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)



30-DEC-09

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

Reference: XENCO Report No: **356646**  
**14" Vac to Jal Legacy**  
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 356646. 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. 356646 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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Houston - Dallas - San Antonio - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America



## Sample Cross Reference 356646



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

14" Vac to Jal Legacy

| Sample Id | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|-----------|--------|-----------------|--------------|---------------|
| SB-4 GW   | W      | Dec-22-09 11:15 |              | 356646-001    |
| SB-5 GW   | W      | Dec-22-09 12:30 |              | 356646-002    |



## **CASE NARRATIVE**

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

**Project Name: 14" Vac to Jal Legacy**

*Project ID: 2009-092*

*Work Order Number: 356646*

*Report Date: 30-DEC-09*

*Date Received: 12/23/2009*

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**Sample receipt non conformances and Comments:**

*None*

---

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

*None*

**Analytical Non Conformances and Comments:**

*Batch: LBA-786923 Inorganic Anions by EPA 300  
E300MI*

*Batch 786923, Chloride recovered above QC limits in the Matrix Spike.*

*Samples affected are: 356646-001, -002.*

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

*Batch: LBA-787536 TDS by SM2540C*

*None*



# Certificate of Analysis Summary 356646

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy

Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Wed Dec-23-09 08:17 am


Report Date: 30-DEC-09

Project Manager: Brent Barron, II

|  |                   |                 |                 |  |  |  |  |
|--|-------------------|-----------------|-----------------|--|--|--|--|
| <b>Analysis Requested</b>                | <b>Lab Id:</b>    | 356646-001      | 356646-002      |  |  |  |  |
|  | <b>Field Id:</b>  | SB-4 GW         | SB-5 GW         |  |  |  |  |
|  | <b>Depth:</b>     |                 |                 |  |  |  |  |
|  | <b>Matrix:</b>    | WATER           | WATER           |  |  |  |  |
|  | <b>Sampled:</b>   | Dec-22-09 11:15 | Dec-22-09 12:30 |  |  |  |  |
| <b>Inorganic Anions In Water by E300</b> | <b>Extracted:</b> |                 |                 |  |  |  |  |
|  | <b>Analyzed:</b>  | Dec-23-09 10:08 | Dec-23-09 10:08 |  |  |  |  |
|  | <b>Units/RL:</b>  | mg/L RL         | mg/L RL         |  |  |  |  |
| Chloride                                 |                   | 8580 250        | 9920 250        |  |  |  |  |
| <b>TDS by SM2540C</b>                    | <b>Extracted:</b> |                 |                 |  |  |  |  |
|  | <b>Analyzed:</b>  | Dec-28-09 14:40 | Dec-28-09 14:40 |  |  |  |  |
|  | <b>Units/RL:</b>  | mg/L RL         | mg/L RL         |  |  |  |  |
| Total dissolved solids                   |                   | 15700 5.00      | 18200 5.00      |  |  |  |  |

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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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| 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 |



## Blank Spike Recovery



Project Name: 14" Vac to Jal Legacy

Work Order #: 356646

Project ID:

2009-092

Lab Batch #: 786923

Sample: 786923-1-BKS

Matrix: Water

Date Analyzed: 12/23/2009

Date Prepared: 12/23/2009

Analyst: LATCOR

Reporting Units: mg/L

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

| Inorganic Anions In Water by E300<br>Analytes | Blank<br>Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|---|------------------------|-----------------------|---------------------------------|-----------------------------|-------------------------|-------|
| Chloride                                      | ND                     | 10.0                  | 10.8                            | 108                         | 90-110                  |       |

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

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

-- Below Reporting Limit





## BS / BSD Recoveries



**Project Name: 14" Vac to Jal Legacy**

**Work Order #: 356646**

**Analyst: WRU**

**Date Prepared: 12/28/2009**

**Project ID: 2009-092**

**Date Analyzed: 12/28/2009**

**Lab Batch ID: 787536**

**Sample: 787536-1-BKS**

**Batch #: 1**

**Matrix: Water**

**Units: mg/L**

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

| TDS by SM2540C         | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes               |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| Total dissolved solids | ND                            | 1000                  | 1040                            | 104                         | 1000                  | 980                                       | 98                            | 6        | 80-120                  | 30                        |      |

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 356646

Lab Batch #: 786923

Date Analyzed: 12/23/2009

Date Prepared: 12/23/2009

Project ID: 2009-092

Analyst: LATCOR

QC- Sample ID: 356608-001 S

Batch #: 1

Matrix: Water

Reporting Units: mg/L

### MATRIX / MATRIX SPIKE RECOVERY STUDY

| Inorganic Anions by EPA 300<br><br>Analytes | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | %R<br>[D] | Control<br>Limits<br>%R | Flag |
|---|-----------------------------------|-----------------------|--------------------------------|-----------|-------------------------|------|
|   |                                   |                       |                                |           |                         |      |
| Chloride                                    | 133                               | 100                   | 244                            | 111       | 90-110                  | X    |

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$   
Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$   
All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit



## Sample Duplicate Recovery

Project Name: 14" Vac to Jal Legacy

Work Order #: 356646

Lab Batch #: 786923

Project ID: 2009-092

Date Analyzed: 12/23/2009

Date Prepared: 12/23/2009

Analyst: LATCOR

QC- Sample ID: 356608-001 D

Batch #: 1

Matrix: Water

Reporting Units: mg/L

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Inorganic Anions In Water by E300  | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Chloride                           | 133                      | 134                         | 1   | 20                  |      |

Lab Batch #: 787536

Date Analyzed: 12/28/2009

Date Prepared: 12/28/2009

Analyst: WRU

QC- Sample ID: 356646-001 D

Batch #: 1

Matrix: Water

Reporting Units: mg/L

| SAMPLE / SAMPLE DUPLICATE RECOVERY |                          |                             |     |                     |      |
|------------------------------------|--------------------------|-----------------------------|-----|---------------------|------|
| TDS by SM2540C                     | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| Analyte                            |                          |                             |     |                     |      |
| Total dissolved solids             | 15700                    | 16300                       | 4   | 30                  |      |

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

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

BRL - Below Reporting Limit

## Environmental Lab of Texas

### 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

**Project Name: 14" Vac to Jal Legacy**

**Company Name** Basin Environmental Service Technologies, LLC

**Project #: 2009-092**

**Company Address: P. O. Box 301**

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

**PO #: PAA - J. Henry**

**Telephone No:** **(505) 441-2244**

**Fax No: (505) 396-1429**

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: C. L. Kynas Email: cstanley@basinenv.com

[illegible]

AS  
12/23/09 250ml poly  
500

# Environmental Lab of Texas

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

Client: Basin Environmental/Plains

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

Lab ID #: 356646

Initials: JS

### Sample Receipt Checklist

Client Initials

|  |            |           |                          |  |
|--|------------|-----------|--------------------------|--|
| #1 Temperature of container/ cooler?                       | <u>Yes</u> | No        | <u>2.6 °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        | Not Present              |  |
| #5 Chain of Custody present?                               | <u>Yes</u> | No        |                          |  |
| #6 Sample instructions complete of Chain of Custody?       | <u>Yes</u> | No        |                          |  |
| #7 Chain of Custody signed when relinquished/ received?    | <u>Yes</u> | No        |                          |  |
| #8 Chain of Custody agrees with sample label(s)?           | <u>Yes</u> | No        | ID written on Cont./ Lid |  |
| #9 Container label(s) legible and intact?                  | <u>Yes</u> | No        | Not Applicable           |  |
| #10 Sample matrix/ properties agree with Chain of Custody? | <u>Yes</u> | No        |                          |  |
| #11 Containers supplied by ELOT?                           | <u>Yes</u> | No        |                          |  |
| #12 Samples in proper container/ bottle?                   | <u>Yes</u> | No        | See Below                |  |
| #13 Samples properly preserved?                            | <u>Yes</u> | No        | See Below                |  |
| #14 Sample bottles intact?                                 | <u>Yes</u> | No        |                          |  |
| #15 Preservations documented on Chain of Custody?          | <u>Yes</u> | No        |                          |  |
| #16 Containers documented on Chain of Custody?             | <u>Yes</u> | No        |                          |  |
| #17 Sufficient sample amount for indicated test(s)?        | <u>Yes</u> | No        | See Below                |  |
| #18 All samples received within sufficient hold time?      | <u>Yes</u> | No        | See Below                |  |
| #19 Subcontract of sample(s)?                              | <u>Yes</u> | <u>No</u> | Not Applicable           |  |
| #20 VOC samples have zero headspace?                       | <u>Yes</u> | No        | <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 366350**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14 Inch Vac to Jal Legacy**

**2009-092**

**24-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)



24-MAR-10

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

Reference: XENCO Report No: **366350**  
**14 Inch Vac to Jal Legacy**  
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 366350. 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. 366350 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 366350



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

14 Inch Vac to Jal Legacy

| Sample Id | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|-----------|--------|-----------------|--------------|---------------|
| MW-1      | W      | Mar-11-10 09:45 |              | 366350-001    |





## CASE NARRATIVE

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

**Project Name:** 14 Inch Vac to Jal Legacy



**Project ID:** 2009-092

**Work Order Number:** 366350

**Report Date:** 24-MAR-10

**Date Received:** 03/19/2010

---

**Sample receipt non conformances and Comments:**

None

---

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

None

**Analytical Non Conformances and Comments:**

**Batch:** LBA-799583 BTEX by EPA 8021

None



# Certificate of Analysis Summary 366350

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14 Inch Vac to Jal Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Fri Mar-19-10 04:47 pm


Report Date: 24-MAR-10

Project Manager: Brent Barron, II

|                           |                   |                 |  |  |  |  |  |
|---------------------------|-------------------|-----------------|--|--|--|--|--|
| <b>Analysis Requested</b> | <b>Lab Id:</b>    | 366350-001      |  |  |  |  |  |
|                           | <b>Field Id:</b>  | MW-1            |  |  |  |  |  |
|                           | <b>Depth:</b>     |                 |  |  |  |  |  |
|                           | <b>Matrix:</b>    | WATER           |  |  |  |  |  |
|                           | <b>Sampled:</b>   | Mar-11-10 09:45 |  |  |  |  |  |
| <b>BTEX by EPA 8021</b>   | <b>Extracted:</b> | Mar-23-10 08:00 |  |  |  |  |  |
|                           | <b>Analyzed:</b>  | Mar-23-10 11:56 |  |  |  |  |  |
|                           | <b>Units/RL:</b>  | mg/L RL         |  |  |  |  |  |
| Benzene                   |                   | 0.0720 0.0010   |  |  |  |  |  |
| Toluene                   |                   | 0.0243 0.0020   |  |  |  |  |  |
| Ethylbenzene              |                   | 0.0020 0.0010   |  |  |  |  |  |
| m,p-Xylenes               |                   | ND 0.0020       |  |  |  |  |  |
| o-Xylene                  |                   | 0.0017 0.0010   |  |  |  |  |  |
| Xylenes, Total            |                   | 0.0017 0.0010   |  |  |  |  |  |
| Total BTEX                |                   | 0.1000 0.0010   |  |  |  |  |  |

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Brent Barron, II  
Odessa Laboratory Manager

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- 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.
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- 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.

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**RL** Reporting Limit

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| 842 Cantwell Lane, Corpus Christi, TX 78408 | (361) 884-0371 | (361) 884-9116 |



## Form 2 - Surrogate Recoveries

Project Name: 14 Inch Vac to Jal Legacy

Work Orders : 366350,

Lab Batch #: 799583

Sample: 558913-1-BKS / BKS

Project ID: 2009-092

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/23/10 10:04

### SURROGATE RECOVERY STUDY

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

Lab Batch #: 799583

Sample: 558913-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/23/10 10:26

### 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 | 0.0309           | 0.0300          | 103             | 80-120            |       |

Lab Batch #: 799583

Sample: 558913-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/23/10 11:34

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0240           | 0.0300          | 80              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0308           | 0.0300          | 103             | 80-120            |       |

Lab Batch #: 799583

Sample: 366350-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/23/10 11:56

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0257           | 0.0300          | 86              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0265           | 0.0300          | 88              | 80-120            |       |

Lab Batch #: 799583

Sample: 366350-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/23/10 20:11

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0268           | 0.0300          | 89              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0277           | 0.0300          | 92              | 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: 14 Inch Vac to Jal Legacy

Work Orders : 366350,

Project ID: 2009-092

Lab Batch #: 799583

Sample: 366350-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/23/10 20:33

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021<br><br>Analytes | Amount<br>Found<br>[A] | True<br>Amount<br>[B] | Recovery<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|----------------------------------|------------------------|-----------------------|-----------------------|-------------------------|-------|
|                                  |                        |                       |                       |                         |       |
| 1,4-Difluorobenzene              | 0.0270                 | 0.0300                | 90                    | 80-120                  |       |
| 4-Bromofluorobenzene             | 0.0282                 | 0.0300                | 94                    | 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.



## BS / BSD Recoveries



Project Name: 14 Inch Vac to Jal Legacy

Work Order #: 366350

Analyst: ASA

Date Prepared: 03/23/2010

Project ID: 2009-092

Date Analyzed: 03/23/2010

Lab Batch ID: 799583

Sample: 558913-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

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

| BTEX by EPA 8021<br><br>Analytes | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|----------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
|                                  |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| Benzene                          | ND                            | 0.1000                | 0.0967                          | 97                          | 0.1                   | 0.0999                                    | 100                           | 3        | 70-125                  | 25                        |      |
| Toluene                          | ND                            | 0.1000                | 0.0966                          | 97                          | 0.1                   | 0.0987                                    | 99                            | 2        | 70-125                  | 25                        |      |
| Ethylbenzene                     | ND                            | 0.1000                | 0.0968                          | 97                          | 0.1                   | 0.1008                                    | 101                           | 4        | 71-129                  | 25                        |      |
| m,p-Xylenes                      | ND                            | 0.2000                | 0.1894                          | 95                          | 0.2                   | 0.1966                                    | 98                            | 4        | 70-131                  | 25                        |      |
| o-Xylene                         | ND                            | 0.1000                | 0.0910                          | 91                          | 0.1                   | 0.0946                                    | 95                            | 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



## Form 3 - MS / MSD Recoveries



Project Name: 14 Inch Vac to Jal Legacy

Work Order #: 366350

Project ID: 2009-092

Lab Batch ID: 799583

QC- Sample ID: 366350-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 03/23/2010

Date Prepared: 03/23/2010

Analyst: ASA

Reporting Units: mg/L

| MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
|--|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
| BTEX by EPA 8021<br>Analytes                         | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
| Benzene  | 0.0720                            | 0.1000                | 0.1522                         | 80                            | 0.1000                | 0.1568                                   | 85                          | 3        | 70-125                  | 25                        |      |
| Toluene  | 0.0243                            | 0.1000                | 0.1053                         | 81                            | 0.1000                | 0.1072                                   | 83                          | 2        | 70-125                  | 25                        |      |
| Ethylbenzene   | 0.0020                            | 0.1000                | 0.0831                         | 81                            | 0.1000                | 0.0839                                   | 82                          | 1        | 71-129                  | 25                        |      |
| m,p-Xylenes  | ND                                | 0.2000                | 0.1560                         | 78                            | 0.2000                | 0.1564                                   | 78                          | 0        | 70-131                  | 25                        |      |
| o-Xylene   | 0.0017                            | 0.1000                | 0.0771                         | 75                            | 0.1000                | 0.0771                                   | 75                          | 0        | 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  
ApplicableN = See Narrative, EQL = Estimated Quantitation Limit





# Environmental Lab of Texas

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

Client: Basin Env. / Plains  
 Date/ Time: 3.19.10 16:47  
 Lab ID #: 366350  
 Initials: AL

### 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?     | <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 | <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 375611**

**for**

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

**Project Manager: Jason Henry**

**14" Vac to Jal Legacy**

**SRS # 2009-92**

**09-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)



09-JUN-10

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

Reference: XENCO Report No: **375611**  
**14" Vac to Jal Legacy**  
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 375611. 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. 375611 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 375611



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

| Sample Id | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|-----------|--------|-----------------|--------------|---------------|
| MW-1      | W      | Jun-04-10 09:45 |              | 375611-001    |



## CASE NARRATIVE

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

**Project Name:** 14" Vac to Jal Legacy

**Project ID:** SRS # 2009-92

**Work Order Number:** 375611

**Report Date:** 09-JUN-10

**Date Received:** 06/04/2010

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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-809848 BTEX by EPA 8021

SW8021BM

Batch 809848, 4-Bromofluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 375611-001.



# Certificate of Analysis Summary 375611

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Id: SRS # 2009-92

Project Name: 14" Vac to Jal Legacy

Date Received in Lab: Fri Jun-04-10 02:20 pm

Contact: Jason Henry

Report Date: 09-JUN-10


Project Location: Lea County, NM

Project Manager: Brent Barron, II

|                           |                   |                 |  |  |  |  |  |
|---------------------------|-------------------|-----------------|--|--|--|--|--|
| <b>Analysis Requested</b> | <b>Lab Id:</b>    | 375611-001      |  |  |  |  |  |
|                           | <b>Field Id:</b>  | MW-1            |  |  |  |  |  |
|                           | <b>Depth:</b>     |                 |  |  |  |  |  |
|                           | <b>Matrix:</b>    | WATER           |  |  |  |  |  |
|                           | <b>Sampled:</b>   | Jun-04-10 09:45 |  |  |  |  |  |
| <b>BTEX by EPA 8021</b>   | <b>Extracted:</b> | Jun-08-10 16:00 |  |  |  |  |  |
|                           | <b>Analyzed:</b>  | Jun-08-10 22:23 |  |  |  |  |  |
|                           | <b>Units/RL:</b>  | mg/L RL         |  |  |  |  |  |
| Benzene                   |                   | 0.1407 0.0010   |  |  |  |  |  |
| Toluene                   |                   | 0.0637 0.0020   |  |  |  |  |  |
| Ethylbenzene              |                   | 0.0047 0.0010   |  |  |  |  |  |
| m,p-Xylenes               |                   | 0.0041 0.0020   |  |  |  |  |  |
| o-Xylene                  |                   | 0.0026 0.0010   |  |  |  |  |  |
| Xylenes, Total            |                   | 0.0067 0.0010   |  |  |  |  |  |
| Total BTEX                |                   | 0.2158 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

## 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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|---|----------------|----------------|
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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: 14" Vac to Jal Legacy

Work Orders : 375611,

Project ID: SRS # 2009-92

Lab Batch #: 809848

Sample: 565236-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/08/10 18:17

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0302           | 0.0300          | 101             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0294           | 0.0300          | 98              | 80-120            |       |

Lab Batch #: 809848

Sample: 565236-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/08/10 18:39

## SURROGATE RECOVERY STUDY

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

Lab Batch #: 809848

Sample: 565236-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/08/10 19:47

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0241           | 0.0300          | 80              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0295           | 0.0300          | 98              | 80-120            |       |

Lab Batch #: 809848

Sample: 375611-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/08/10 22:23

## SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0277           | 0.0300          | 92              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0238           | 0.0300          | 79              | 80-120            | *     |

Lab Batch #: 809848

Sample: 375188-002 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/09/10 04:23

## 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 | 0.0286           | 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] =  $100 \cdot A / B$

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





## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 375611,

Project ID: SRS # 2009-92

Lab Batch #: 809848

Sample: 375188-002 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/09/10 04:45

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     |  | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|--|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |  |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  |  | 0.0280           | 0.0300          | 93              | 80-120            |       |
| 4-Bromofluorobenzene |  | 0.0281           | 0.0300          | 94              | 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.



## BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 375611

Analyst: ASA

Date Prepared: 06/08/2010

Project ID: SRS # 2009-92

Date Analyzed: 06/08/2010

Lab Batch ID: 809848

Sample: 565236-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

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

| BTEX by EPA 8021<br><br>Analytes | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|----------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
|                                  |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| Benzene                          | ND                            | 0.1000                | 0.0959                          | 96                          | 0.1                   | 0.1012                                    | 101                           | 5        | 70-125                  | 25                        |      |
| Toluene                          | ND                            | 0.1000                | 0.0961                          | 96                          | 0.1                   | 0.1019                                    | 102                           | 6        | 70-125                  | 25                        |      |
| Ethylbenzene                     | ND                            | 0.1000                | 0.1011                          | 101                         | 0.1                   | 0.1066                                    | 107                           | 5        | 71-129                  | 25                        |      |
| m,p-Xylenes                      | ND                            | 0.2000                | 0.2021                          | 101                         | 0.2                   | 0.2135                                    | 107                           | 5        | 70-131                  | 25                        |      |
| o-Xylene                         | ND                            | 0.1000                | 0.0998                          | 100                         | 0.1                   | 0.1061                                    | 106                           | 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 - MS / MSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 375611

Project ID: SRS # 2009-92

Lab Batch ID: 809848

QC- Sample ID: 375188-002 S

Batch #: 1 Matrix: Water

Date Analyzed: 06/09/2010

Date Prepared: 06/08/2010

Analyst: ASA

Reporting Units: mg/L

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
|                              |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
| Benzene                      | 0.0013                            | 0.1000                | 0.0848                         | 84                            | 0.1000                | 0.0873                                   | 86                          | 3        | 70-125                  | 25                        |      |
| Toluene                      | ND                                | 0.1000                | 0.0845                         | 85                            | 0.1000                | 0.0882                                   | 88                          | 4        | 70-125                  | 25                        |      |
| Ethylbenzene                 | ND                                | 0.1000                | 0.0869                         | 87                            | 0.1000                | 0.0908                                   | 91                          | 4        | 71-129                  | 25                        |      |
| m,p-Xylenes                  | ND                                | 0.2000                | 0.1727                         | 86                            | 0.2000                | 0.1773                                   | 89                          | 3        | 70-131                  | 25                        |      |
| o-Xylene                     | ND                                | 0.1000                | 0.0845                         | 85                            | 0.1000                | 0.0886                                   | 89                          | 5        | 71-133                  | 25                        |      |

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

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

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

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

Project Name: 14" Vac to Jal Legacy

Project #: SRS# 2009-92

Project Loc: Lea County, NM

PO #: PAA~J. Henry

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

Final Ver. 1.000

**XENCO Laboratories**

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No : SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

**Prelogin / Nonconformance Report - Sample Log-In**Client: Basin Env. / PlainsDate/Time: 6-4-10 14:20Lab ID #: 375611Initials: AL**Sample Receipt Checklist**

|   |              |              |              |              |
|---|--------------|--------------|--------------|--------------|
| 1. Samples 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 label(s)?                            | <u>Yes</u>   | No           |              |              |
| 9. Container labels 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 5.1 °C  | lbs °C       | lbs °C       | lbs °C       | lbs °C       |

**Nonconformance Documentation**

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

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

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

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

**Analytical Report 391428**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14" Vac to Jal Legacy**

**2009-092**

**01-OCT-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

**Xenco-Houston (EPA Lab code: TX00122):**

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

**Xenco-Atlanta (EPA Lab Code: GA00046):**

**Florida (E87429), North Carolina (483), South Carolina (98015), Utah (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: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**

**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)**

**Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)**



01-OCT-10

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

Reference: XENCO Report No: **391428**  
**14" Vac to Jal Legacy**  
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 391428. 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. 391428 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 391428



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

| Sample Id | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|-----------|--------|-----------------|--------------|---------------|
| MW-1      | W      | Sep-23-10 09:30 |              | 391428-001    |





## CASE NARRATIVE

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

**Project Name:** 14" Vac to Jal Legacy



**Project ID:** 2009-092

**Work Order Number:** 391428

**Report Date:** 01-OCT-10

**Date Received:** 09/27/2010

---

**Sample receipt non conformances and Comments:**

None

---

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

None



# Certificate of Analysis Summary 391428

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Mon Sep-27-10 03:22 pm


Report Date: 01-OCT-10

Project Manager: Brent Barron, II

|                           |                   |                 |  |  |  |  |  |
|---------------------------|-------------------|-----------------|--|--|--|--|--|
| <b>Analysis Requested</b> | <b>Lab Id:</b>    | 391428-001      |  |  |  |  |  |
|                           | <b>Field Id:</b>  | MW-1            |  |  |  |  |  |
|                           | <b>Depth:</b>     |                 |  |  |  |  |  |
|                           | <b>Matrix:</b>    | WATER           |  |  |  |  |  |
|                           | <b>Sampled:</b>   | Sep-23-10 09:30 |  |  |  |  |  |
| <b>BTEX by EPA 8021</b>   | <b>Extracted:</b> | Sep-29-10 15:40 |  |  |  |  |  |
|                           | <b>Analyzed:</b>  | Sep-30-10 05:01 |  |  |  |  |  |
|                           | <b>Units/RL:</b>  | mg/L RL         |  |  |  |  |  |
|                           |                   |                 |  |  |  |  |  |
| Benzene                   |                   | 0.0514 0.0010   |  |  |  |  |  |
| Toluene                   |                   | 0.0278 0.0020   |  |  |  |  |  |
| Ethylbenzene              |                   | 0.0022 0.0010   |  |  |  |  |  |
| m,p-Xylenes               |                   | 0.0028 0.0020   |  |  |  |  |  |
| o-Xylene                  |                   | 0.0019 0.0010   |  |  |  |  |  |
| Xylenes, Total            |                   | 0.0047 0.0010   |  |  |  |  |  |
| Total BTEX                |                   | 0.0861 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
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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|   | Phone          | Fax            |
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| 9701 Harry Hines Blvd , Dallas, TX 75220    | (214) 902 0300 | (214) 351-9139 |
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| 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: 14" Vac to Jal Legacy

Work Orders : 391428,

Lab Batch #: 825380

Sample: 574732-1-BKS / BKS

Project ID: 2009-092

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/30/10 03:06

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0334           | 0.0300          | 111             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0345           | 0.0300          | 115             | 80-120            |       |

Lab Batch #: 825380

Sample: 574732-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/30/10 03:29

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0332           | 0.0300          | 111             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0354           | 0.0300          | 118             | 80-120            |       |

Lab Batch #: 825380

Sample: 574732-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/30/10 04:38

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0298           | 0.0300          | 99              | 80-120            |       |
| 4-Bromofluorobenzene | 0.0322           | 0.0300          | 107             | 80-120            |       |

Lab Batch #: 825380

Sample: 391428-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/30/10 05:01

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0314           | 0.0300          | 105             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0309           | 0.0300          | 103             | 80-120            |       |

Lab Batch #: 825380

Sample: 391428-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/30/10 05:24

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021     | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|----------------------|------------------|-----------------|-----------------|-------------------|-------|
| Analytes             |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene  | 0.0323           | 0.0300          | 108             | 80-120            |       |
| 4-Bromofluorobenzene | 0.0317           | 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: 14" Vac to Jal Legacy

Work Orders : 391428,

Project ID: 2009-092

Lab Batch #: 825380

Sample: 391428-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/30/10 05:47

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021<br><br>Analytes | Amount<br>Found<br>[A] | True<br>Amount<br>[B] | Recovery<br>%R<br>[D] | Control<br>Limits<br>%R | Flags |
|----------------------------------|------------------------|-----------------------|-----------------------|-------------------------|-------|
|                                  |                        |                       |                       |                         |       |
| 1,4-Difluorobenzene              | 0.0322                 | 0.0300                | 107                   | 80-120                  |       |
| 4-Bromofluorobenzene             | 0.0321                 | 0.0300                | 107                   | 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.



## BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 391428

Analyst: ASA

Date Prepared: 09/29/2010

Project ID: 2009-092

Date Analyzed: 09/30/2010

Lab Batch ID: 825380

Sample: 574732-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

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

| BTEX by EPA 8021<br><br>Analytes | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|----------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
|                                  |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| Benzene                          | ND                            | 0.1000                | 0.0924                          | 92                          | 0.1                   | 0.0907                                    | 91                            | 2        | 70-125                  | 25                        |      |
| Toluene                          | ND                            | 0.1000                | 0.0915                          | 92                          | 0.1                   | 0.0895                                    | 90                            | 2        | 70-125                  | 25                        |      |
| Ethylbenzene                     | ND                            | 0.1000                | 0.0927                          | 93                          | 0.1                   | 0.0914                                    | 91                            | 1        | 71-129                  | 25                        |      |
| m,p-Xylenes                      | ND                            | 0.2000                | 0.1817                          | 91                          | 0.2                   | 0.1796                                    | 90                            | 1        | 70-131                  | 25                        |      |
| o-Xylene                         | ND                            | 0.1000                | 0.0938                          | 94                          | 0.1                   | 0.0927                                    | 93                            | 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 - MS / MSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 391428

Project ID: 2009-092

Lab Batch ID: 825380

QC- Sample ID: 391428-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 09/30/2010

Date Prepared: 09/29/2010

Analyst: ASA

Reporting Units: mg/L

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021<br>Analytes | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
|                              |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
| Benzene                      | 0.0514                            | 0.1000                | 0.1409                         | 90                            | 0.1000                | 0.1407                                   | 89                          | 0        | 70-125                  | 25                        |      |
| Toluene                      | 0.0278                            | 0.1000                | 0.1173                         | 90                            | 0.1000                | 0.1167                                   | 89                          | 1        | 70-125                  | 25                        |      |
| Ethylbenzene                 | 0.0022                            | 0.1000                | 0.0906                         | 88                            | 0.1000                | 0.0896                                   | 87                          | 1        | 71-129                  | 25                        |      |
| m,p-Xylenes                  | 0.0028                            | 0.2000                | 0.1724                         | 85                            | 0.2000                | 0.1697                                   | 83                          | 2        | 70-131                  | 25                        |      |
| o-Xylene                     | 0.0019                            | 0.1000                | 0.0905                         | 89                            | 0.1000                | 0.0882                                   | 86                          | 3        | 71-133                  | 25                        |      |

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

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

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

## Environmental Lab of Texas

### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East  
Odessa, Texas 79768

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

**Project Manager:** Camille Bryant

**Project Name: 14" Vac to Jal Legacy**

Company Name Basin Environmental Consulting, LLC

**Project #: 2009-092**

Company Address: P. O. Box 381

**Project Loc:** Lea County, NM

City/State/Zip: Lovington, NM 88260

**PO #: PAA - Jason Henry**

Telephone No: (575) 605-7210

Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature:**

e-mail: [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]





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

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

### Prelogin / Nonconformance Report - Sample Log-In

Client: Basin Env. / Plains  
Date/Time: 9-27-10 15:22  
Lab ID #: 391428  
Initials: AE

#### Sample Receipt Checklist

|   |              |              |              |              |
|---|--------------|--------------|--------------|--------------|
| 1. Samples 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 label(s)?                            | <u>Yes</u>   | No           |              |              |
| 9. Container labels 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>4.1</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

**Analytical Report 397215**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**14" Vac to Jal Legacy**

**2009-092**

**17-NOV-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

**Xenco-Houston (EPA Lab code: TX00122):**

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

**Xenco-Atlanta (EPA Lab Code: GA00046):**

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (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: FL01273):**

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

**Xenco Phoenix (EPA Lab Code: AZ00901):**

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901):** Arizona (AZM757)

**Xenco Tucson (EPA Lab code:AZ000989):** Arizona (AZ0758)



17-NOV-10

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

Reference: XENCO Report No: **397215**  
**14" Vac to Jal Legacy**  
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 397215. 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. 397215 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 397215



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

14" Vac to Jal Legacy

| Sample Id | Matrix | Date Collected  | Sample Depth | Lab Sample Id |
|-----------|--------|-----------------|--------------|---------------|
| MW-1      | W      | Nov-05-10 15:00 |              | 397215-001    |



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: 14" Vac to Jal Legacy*



*Project ID: 2009-092*

*Work Order Number: 397215*

*Report Date: 17-NOV-10*

*Date Received: 11/12/2010*

---

**Sample receipt non conformances and Comments:**

None

---

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

None



# Certificate of Analysis Summary 397215

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy



Project Id: 2009-092

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Fri Nov-12-10 04:20 pm


Report Date: 17-NOV-10

Project Manager: Brent Barron, II

|                           |                   |                 |  |  |  |  |  |
|---------------------------|-------------------|-----------------|--|--|--|--|--|
| <b>Analysis Requested</b> | <b>Lab Id:</b>    | 397215-001      |  |  |  |  |  |
|                           | <b>Field Id:</b>  | MW-1            |  |  |  |  |  |
|                           | <b>Depth:</b>     |                 |  |  |  |  |  |
|                           | <b>Matrix:</b>    | WATER           |  |  |  |  |  |
|                           | <b>Sampled:</b>   | Nov-05-10 15:00 |  |  |  |  |  |
| <b>BTEX by EPA 8021B</b>  | <b>Extracted:</b> | Nov-15-10 16:45 |  |  |  |  |  |
|                           | <b>Analyzed:</b>  | Nov-16-10 11:10 |  |  |  |  |  |
|                           | <b>Units/RL:</b>  | mg/L RL         |  |  |  |  |  |
| Benzene                   |                   | 0.2795 0.0010   |  |  |  |  |  |
| Toluene                   |                   | 0.1807 0.0020   |  |  |  |  |  |
| Ethylbenzene              |                   | 0.0126 0.0010   |  |  |  |  |  |
| m_p-Xylenes               |                   | 0.0114 0.0020   |  |  |  |  |  |
| o-Xylene                  |                   | 0.0049 0.0010   |  |  |  |  |  |
| Total Xylenes             |                   | 0.0163 0.0010   |  |  |  |  |  |
| Total BTEX                |                   | 0.4891 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

## Flagging Criteria

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

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|   | 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: 14" Vac to Jal Legacy

Work Orders : 397215,

Project ID: 2009-092

Lab Batch #: 832334

Sample: 578959-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/16/10 09:43

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0344              | 0.0300             | 115                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0313              | 0.0300             | 104                   | 80-120               |       |

Lab Batch #: 832334

Sample: 578959-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/16/10 10:05

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0323              | 0.0300             | 108                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0353              | 0.0300             | 118                   | 80-120               |       |

Lab Batch #: 832334

Sample: 578959-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/16/10 10:48

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0252              | 0.0300             | 84                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0311              | 0.0300             | 104                   | 80-120               |       |

Lab Batch #: 832334

Sample: 397215-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/16/10 11:10

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0265              | 0.0300             | 88                    | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0250              | 0.0300             | 83                    | 80-120               |       |

Lab Batch #: 832334

Sample: 397215-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/16/10 14:46

### SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Amount Found<br>[A] | True Amount<br>[B] | Recovery<br>%R<br>[D] | Control Limits<br>%R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 1,4-Difluorobenzene           | 0.0311              | 0.0300             | 104                   | 80-120               |       |
| 4-Bromofluorobenzene          | 0.0269              | 0.0300             | 90                    | 80-120               |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 397215,

Project ID: 2009-092

Lab Batch #: 832334

Sample: 397215-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/16/10 15:08

### 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 |  | 0.0279           | 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.



## BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 397215

Analyst: ASA

Date Prepared: 11/15/2010

Project ID: 2009-092

Date Analyzed: 11/16/2010

Lab Batch ID: 832334

Sample: 578959-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

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

| BTEX by EPA 8021B<br><br>Analytes | Blank<br>Sample Result<br>[A] | Spike<br>Added<br>[B] | Blank<br>Spike<br>Result<br>[C] | Blank<br>Spike<br>%R<br>[D] | Spike<br>Added<br>[E] | Blank<br>Spike<br>Duplicate<br>Result [F] | Blk. Spk<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|-----------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
|                                   |                               |                       |                                 |                             |                       |   |                               |          |                         |                           |      |
| Benzene                           | ND                            | 0.1000                | 0.0961                          | 96                          | 0.1                   | 0.1026                                    | 103                           | 7        | 70-125                  | 25                        |      |
| Toluene                           | ND                            | 0.1000                | 0.0930                          | 93                          | 0.1                   | 0.0996                                    | 100                           | 7        | 70-125                  | 25                        |      |
| Ethylbenzene                      | ND                            | 0.1000                | 0.0935                          | 94                          | 0.1                   | 0.1008                                    | 101                           | 8        | 71-129                  | 25                        |      |
| m_p-Xylenes                       | ND                            | 0.2000                | 0.1896                          | 95                          | 0.2                   | 0.2038                                    | 102                           | 7        | 70-131                  | 25                        |      |
| o-Xylene                          | ND                            | 0.1000                | 0.0924                          | 92                          | 0.1                   | 0.0972                                    | 97                            | 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: 14" Vac to Jal Legacy

Work Order #: 397215

Project ID: 2009-092

Lab Batch ID: 832334

QC- Sample ID: 397215-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 11/16/2010

Date Prepared: 11/15/2010

Analyst: ASA

Reporting Units: mg/L

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B<br>Analytes | Parent<br>Sample<br>Result<br>[A] | Spike<br>Added<br>[B] | Spiked Sample<br>Result<br>[C] | Spiked<br>Sample<br>%R<br>[D] | Spike<br>Added<br>[E] | Duplicate<br>Spiked Sample<br>Result [F] | Spiked<br>Dup.<br>%R<br>[G] | RPD<br>% | Control<br>Limits<br>%R | Control<br>Limits<br>%RPD | Flag |
|-------------------------------|-----------------------------------|-----------------------|--------------------------------|-------------------------------|-----------------------|--|-----------------------------|----------|-------------------------|---------------------------|------|
|                               |                                   |                       |                                |                               |                       |  |                             |          |                         |                           |      |
| Benzene                       | 0.2795                            | 0.1000                | 0.3749                         | 95                            | 0.1000                | 0.3882                                   | 109                         | 3        | 70-125                  | 25                        |      |
| Toluene                       | 0.1807                            | 0.1000                | 0.2835                         | 103                           | 0.1000                | 0.2916                                   | 111                         | 3        | 70-125                  | 25                        |      |
| Ethylbenzene                  | 0.0126                            | 0.1000                | 0.1002                         | 88                            | 0.1000                | 0.1015                                   | 89                          | 1        | 71-129                  | 25                        |      |
| m_p-Xylenes                   | 0.0114                            | 0.2000                | 0.1834                         | 86                            | 0.2000                | 0.1834                                   | 86                          | 0        | 70-131                  | 25                        |      |
| o-Xylene                      | 0.0049                            | 0.1000                | 0.0928                         | 88                            | 0.1000                | 0.0934                                   | 89                          | 1        | 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

### 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: Ben Arguljo**

**Project Name: 14" Vac to Jal Legacy**

**Company Name**      **Basin Environmental Consulting, LLC**

**Project #: 2009-092**

**Company Address: P. O. Box 301**

**Project Loc: Lea County, NM**

City/State/Zip: Lovington, NM 88260

**PO #: PAA - Jason Henry**

**Telephone No: 575.396.2378**

**Fax No: (575) 396-1429**

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: *[Signature]*

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

[illegible]

**XENCO Laboratories**

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

**Prelogin / Nonconformance Report - Sample Log-In**

Plains  
Client: Basin Environmental  
Date/Time: 11-18-10 16:20  
Lab ID #: 397215  
Initials: AM

**Sample Receipt Checklist**

|   |              |              |              |              |
|---|--------------|--------------|--------------|--------------|
| 1. Samples on ice?  | Blue         | Water        | No           |              |
| 2. Shipping container in good condition?                            | Yes          | No           | None         |              |
| 3. Custody seals intact on shipping container (cooler) and bottles? | Yes          | No           | N/A          |              |
| 4. Chain of Custody present?  | Yes          | No           |              |              |
| 5. Sample instructions complete on chain of custody?                | Yes          | No           |              |              |
| 6. Any missing / extra samples?                                     | Yes          | No           |              |              |
| 7. Chain of custody signed when relinquished / received?            | Yes          | No           |              |              |
| 8. Chain of custody agrees with sample label(s)?                    | Yes          | No           |              |              |
| 9. Container labels legible and intact?                             | Yes          | No           |              |              |
| 10. Sample matrix / properties agree with chain of custody?         | Yes          | No           |              |              |
| 11. Samples in proper container / bottle?                           | Yes          | No           |              |              |
| 12. Samples properly preserved?                                     | Yes          | No           | N/A          |              |
| 13. Sample container intact?  | Yes          | No           |              |              |
| 14. Sufficient sample amount for indicated test(s)?                 | Yes          | No           |              |              |
| 15. All samples received within sufficient hold time?               | Yes          | No           |              |              |
| 16. Subcontract of sample(s)?                                       | Yes          | No           | N/A          |              |
| 17. VOC sample have zero head space?                                | Yes          | No           | N/A          |              |
| 18. Cooler 1 No.  | Cooler 2 No. | Cooler 3 No. | Cooler 4 No. | Cooler 5 No. |
| lbs 3.1 °C  | lbs °C       | lbs °C       | lbs °C       | lbs °C       |

**Nonconformance Documentation**

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

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

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

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

# **Appendix C**

## **Photographs**



14 Inch Vac to Jal Legacy Initial Release



Excavation Activities at the 14 Inch Vac to Jal Legacy Release Site





Excavation Activities at the 14 Inch Vac to Jal Legacy Release Site



Excavation Activities at the 14 Inch Vac to Jal Legacy Release Site





14 Inch Vac to Jal Legacy Release Site Looking South



14 Inch Vac to Jal Legacy Release Site Looking East





Completion of Remediation Activities at the 14 Inch Vac to Jal Legacy Release Site



Completion of Remediation Activities at the 14 Inch Vac to Jal Legacy Release Site

**Appendix D**  
**Release Notification &**  
**Corrective Action**  
**(Form C-141, Initial)**

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  
220 S. St. Francis Dr., Santa Fe, NM 87505

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

RECEIVED

APR 20 2009  
HOBBSOCD

Form C-141  
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

|                 |                                      |               |                |
|-----------------|--------------------------------------|---------------|----------------|
| Name of Company | Plains Pipeline, LP                  | Contact       | Jason Henry    |
| Address         | 2530 Hwy 214 - Denver City, Tx 79323 | Telephone No. | (575) 441-1099 |
| Facility Name   | 14 - inch Vac to Jal Legacy          | Facility Type | Pipeline       |

|               |                  |               |  |           |  |
|---------------|------------------|---------------|--|-----------|--|
| Surface Owner | Legacy Petroleum | Mineral Owner |  | Lease No. |  |
|---------------|------------------|---------------|--|-----------|--|

LOCATION OF RELEASE

NEAREST WELL API # 30-025-11759-00-00

|             |         |          |       |               |                  |               |                |        |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
| F           | 25      | 25S      | 37E   |               |                  |               |                | Lea    |

Latitude N 32° 6' 10.7" Longitude W 103° 7' 10.3"

NATURE OF RELEASE

|                             |   |   |                    |                            |                       |
|-----------------------------|---|---|--------------------|----------------------------|-----------------------|
| Type of Release             | Crude Oil   | Volume of Release                         | 250 bbls           | Volume Recovered           | 0 bbls                |
| Source of Release           | 14" Steel Pipeline  | Date and Hour of Occurrence               | 04/09/2009         | Date and Hour of Discovery | 04/09/2009 10:00 a.m. |
| Was Immediate Notice Given? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom?                          | Larry Johnson      |                            |                       |
| By Whom?                    | Jason Henry   | Date and Hour                             | 04/09/2009 @ 14:20 |                            |                       |
| 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.\*

WATER @ 55'

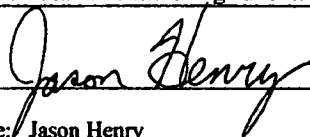
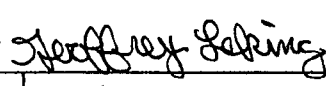
Describe Cause of Problem and Remedial Action Taken.\*

During the purging of the 14-inch Sweet Vac to Jal Line, a release of crude oil occurred due to external corrosion. Throughput for the subject line is 0 bbls/day because the line is inactive and was being purged at the time of the release. The depth of the pipeline at the release point is approximately 2' bgs. The H2S concentration in the crude is less than 10 ppm and the gravity of the crude is 38.

Describe Area Affected and Cleanup Action Taken.\*

The released crude resulted in a surface stain that measured approximately 300' x 300'. The impacted area will be remediated per applicable guidelines.

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

|  |  |  |                           |
|--|--|--|---------------------------|
| Signature:  |  | OIL CONSERVATION DIVISION  |                           |
| Printed Name: Jason Henry  |  | Approved by District Supervisor:  |                           |
| Title: Remediation Coordinator   |  | Approval Date: 04/21/09  | Expiration Date: 06/22/09 |
| E-mail Address: jhenry@paalp.com   |  | Conditions of Approval: DELINEATE TO CLEANUP. SUBMIT FINAL C-141 BY 06/22/09.  |                           |
| Date: 04/20/2009 Phone: (575) 441-1099   |  | Attached <input type="checkbox"/>  |                           |

\* Attach Additional Sheets If Necessary

IRP - 2162 (09.4)

FGRLO912457808

**Appendix E**  
**Release Notification &**  
**Corrective Action**  
**(Form C-141, Final)**

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
90 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**

Reference # IR-2162

**OPERATOR**

☐ Initial Report ☒ Final Report

|                 |                                      |               |                |
|-----------------|--------------------------------------|---------------|----------------|
| Name of Company | Plains Pipeline, LP                  | Contact       | Jason Henry    |
| Address         | 2530 Hwy 214 - Denver City, TX 79323 | Telephone No. | (575) 441-1099 |
| Facility Name   | 14 - inch Vac to Jal Legacy          | Facility Type | Pipeline       |

|               |                   |               |  |           |  |
|---------------|-------------------|---------------|--|-----------|--|
| Surface Owner | COG Operating LLC | Mineral Owner |  | Lease No. |  |
|---------------|-------------------|---------------|--|-----------|--|

**LOCATION OF RELEASE**

|             |         |          |       |               |                  |               |                |        |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
| F           | 25      | 25S      | 37E   |               |                  |               |                | Lea    |

Latitude N 32° 6' 10.7" Longitude W 103° 7' 10.3"

**NATURE OF RELEASE**

|                   |                    |                             |            |                            |                       |
|-------------------|--------------------|-----------------------------|------------|----------------------------|-----------------------|
| Type of Release   | Crude Oil          | Volume of Release           | 250 bbls   | Volume Recovered           | 0 bbls                |
| Source of Release | 14" Steel Pipeline | Date and Hour of Occurrence | 04/09/2009 | Date and Hour of Discovery | 04/09/2009 10:00 a.m. |

|                             |   |                  |               |
|-----------------------------|---|------------------|---------------|
| Was Immediate Notice Given? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom? | Larry Johnson |
|-----------------------------|---|------------------|---------------|

|          |             |               |                    |
|----------|-------------|---------------|--------------------|
| By Whom? | Jason Henry | Date and Hour | 04/09/2009 @ 14:20 |
|----------|-------------|---------------|--------------------|

|                            |   |   |  |
|----------------------------|---|---|--|
| 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.\*

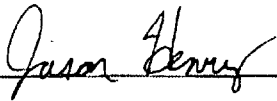
Describe Cause of Problem and Remedial Action Taken.\*

During the purging of the 14-inch Sweet Vac to Jal Line, a release of crude oil occurred due to external corrosion. Throughput for the subject line is 0 bbls/day because the line is inactive and was being purged at the time of the release. The depth of the pipeline at the release point is approximately 2' bgs. The H2S concentration in the crude is less than 10 ppm and the gravity of the crude is 38.

Describe Area Affected and Cleanup Action Taken.\*

Please see the attached Basin Environmental Service Technologies Remediation Summary and Site Closure Request for details of remedial activities conducted at the site.

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

|  |  |                                  |                                   |
|--|--|----------------------------------|-----------------------------------|
| Signature:  |  | <b>OIL CONSERVATION DIVISION</b> |                                   |
| Printed Name: Jason Henry  |  | Approved by District Supervisor: |                                   |
| Title: Remediation Coordinator   |  | Approval Date:                   | Expiration Date:                  |
| E-mail Address: jhenry@paalp.com   |  | Conditions of Approval:          | Attached <input type="checkbox"/> |
| Date: 01/05/2011   |  | Phone: (575) 441-1099            |                                   |