

1R - 2166

# WORKPLANS

DATE:

July 2009



**PLAINS**  
PIPELINE, L.P.

RECEIVED

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July 30, 2009

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. DCP Plant to Lea Station 6-inch Sec. 31  
NMOCD Reference # 1R-2166  
Unit Letter K of Section 31, Township 20 South, Range 37 East  
Lea County, New Mexico

Dear Mr. Hansen:

Plains Pipeline, L.P. is pleased to submit the attached *Remediation Summary and Proposed Remediation Strategy*, dated July 2009, for the DCP Plant to Lea Station 6-inch Sec. 31 site. This site is located in Section 31 of Township 20 South, and Range 37 East of Lea County, New Mexico. This document details the proposed soil and groundwater remediation activities to be performed at the site.

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

Sincerely,

Jason Henry  
Remediation Coordinator  
Plains All American

CC: Larry Johnson, NMOCD, Hobbs Office  
Thaddeus Kostrubala, NMSLO, Santa Fe Office

Enclosure

# ***Basin Environmental Consulting, LLC***

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## **REMEDIATION SUMMARY AND PROPOSED REMEDIATION STRATEGY**

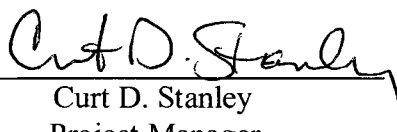
**PLAINS PIPELINE, L.P. (231735)  
DCP Plant to Lea Station 6-Inch Sec. 31  
Lea County, New Mexico  
Plains SRS # 2009-084  
UNIT LTR "K" (NE ¼ /SW ¼ ), Section 31, Township 20 South, Range 37 East  
Latitude 32.52733° North, Longitude 103.2906° West  
NMOCD Reference # 1RP-2166**

Prepared For:

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

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

**July 2009**

  
Curt D. Stanley  
Project Manager

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## **INTRODUCTION AND BACKGROUND INFORMATION**

Basin Environmental Consulting, LLC (Basin), on behalf of Plains Pipeline, L.P. (Plains), has prepared this Remediation Summary and Proposed Remediation Strategy for the release site known as DCP Plant to Lea Station 6-Inch Sec. 31 (SRS # 2009-084). The legal description of the release site is Unit Letter "K" (NE ¼ SW ¼), Section 31, Township 20 South, Range 37 East, in Lea County, New Mexico. The property affected by the release is owned by The State of New Mexico (ROE permit #1794) and is administered by the New Mexico State Land Office (NMSLO). The release site GPS coordinates are 32.52733° North and 103.2906° 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 2, 2009, Plains discovered a crude oil release from a six (6)-inch steel pipeline. During initial response activities, Plains installed a temporary pipeline clamp on the pipeline to mitigate the release. The crude oil release resulted in a surface stain measuring approximately six (6) feet in width and eight (8) feet in length. The initial site assessment indicated approximately two (2) to three (3) barrels of crude oil was released from the pipeline and Plains initially classified the release as a "non-reportable" release. On April 7, 2009, following initial response activities, a soil investigation trench was excavated to a depth of approximately fourteen (14) feet below ground surface (bgs), parallel to the six (6) inch Plains pipeline. Based on visual and olfactory observations of the investigation trench, a soil boring was advanced on April 15, 2009 to further assess the vertical extent of impact at the site. On April 29, 2009, following the review of the existing data, Plains representatives reclassified the release as a "reportable" release. Plains notified the New Mexico Oil Conservation Division (NMOCD) - Hobbs District Office and Santa Fe Office of the release and a Release Notification and Corrective Action (Form C-141) was submitted. The Form C-141 indicated approximately twenty (20) barrels of crude oil was released from the pipeline, with no recovery. The cause of the release was attributed to external corrosion of the pipeline. General photographs of the site are provided as Appendix C.

The northern extent of the release site contains a pipeline corridor containing a twenty-four (24) and sixteen (16) inch diameter gas poly pipeline operated by DCP Midstream Partners, L.P. (DCP). In addition, an eight (8) inch fiberglass water pipeline operated by XTO Energy (XTO) is located to the north of the DCP poly pipelines and an abandoned ten (10) inch steel pipeline bisects the DCP Plant to Lea Station 6-Inch Sec. 31 excavation.

Plains maintains the large diameter and line spacing of the DCP poly pipelines constitutes a health and safety hazard to Plains personnel and contractors working in close proximity to the pipelines. Plains requests NMOCD approval, to leave in-situ, impacted soil beneath and adjacent to the DCP poly pipelines.

## **NMOCD SITE CLASSIFICATION**

According to data obtained from the New Mexico Office of the State Engineer (NMOSE), no water wells have been registered in Section 31. Soil boring (SB-1) advanced by Plains, indicated groundwater was encountered at a depth of approximately seventy-seven (77) feet bgs. 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 approximately sixty (60) feet bgs. The depth of hydrocarbon impact versus the depth of

groundwater results in a score of twenty (20) being assigned to the site based on the NMOCD depth to groundwater criteria.

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

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

The NMOCD guidelines indicate the DCP Plant to Lea Station 6-Inch Sec 31 release site has an ranking score of twenty (20). Based on this score, the soil remediation levels for a site with a ranking score of twenty (20) points are as follows:

- Benzene – 10 mg/Kg (ppm)
- BTEX – 50 mg/Kg (ppm)
- TPH – 100 mg/Kg (ppm)

## **SUMMARY OF SOIL REMEDIATION ACTIVITIES**

On April 7, 2009, following initial response activities, a soil investigation trench was excavated to a depth of approximately fourteen (14) feet bgs, parallel to the six (6) inch Plains pipeline. Based on visual and olfactory observations of the investigation trench, additional soil investigation was warranted.

On April 15, 2009, one (1) soil boring (SB-1) was advanced approximately ten (10) feet west of the release point to evaluate the vertical extent of soil impact. A soil boring log is 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 benzene, toluene, ethyl-benzene and xylene (BTEX) and total petroleum hydrocarbon (TPH) using EPA SW-846 8021b and SW-846 8015M, respectively.

Soil boring SB-1 was located approximately ten (10) feet west of the release point. The soil boring was advanced to a total depth of approximately eighty-five (85) feet bgs. Soil samples were collected at ten (10), twenty (20), thirty (30), forty (40), fifty (50), sixty (60), seventy (70) and seventy-five (75) feet bgs and submitted to the laboratory. The laboratory analytical results indicated benzene concentrations were less than the laboratory method detection limit (MDL) in all of the submitted soil samples, with the exception of the soil sample (SB-1 @ 10') collected at ten (10) feet bgs, which exhibited a benzene concentration of 0.0017 mg/Kg. All of the submitted soil samples exhibited benzene concentrations less than the NMOCD regulatory standard of 10 mg/Kg. The laboratory analytical results indicated BTEX constituent concentrations ranged from less than the laboratory MDL in soil samples SB-1 @ 60', SB-1 @ 70' and SB-1 @ 75' to 1.931 mg/Kg in the soil sample SB-1 @ 50'. The laboratory analytical results indicated TPH concentrations ranged from 40.6 mg/Kg in the soil sample SB-1 @ 70' to 1,479.2 mg/Kg in the soil sample SB-1 @ 40'. Table 1 summarizes the Concentrations of Benzene, BTEX and TPH in

Soil. A soil boring log is provided as Appendix A and analytical reports are provided as Appendix B.

During the advancement of the soil boring, groundwater was encountered at approximately seventy-seven (77) feet bgs. A temporary casing was installed in the soil boring to allow a groundwater sample to be collected for analysis. On April 16, 2009, a groundwater sample (SB-1) 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. Based on the analytical results of the submitted groundwater sample, Plains notified NMOCD representatives at the Hobbs District Office and the Santa Fe Office of the laboratory confirmed impact to groundwater at the release site. A description of the groundwater remediation activities conducted at the site is included in the Summary of Groundwater Remediation Activities below.

On June 2, 2009, following the advancement of the soil boring, excavation of the impacted soil commenced. Excavated soil was stockpiled on-site on plastic to mitigate the potential leaching of contaminants into the vadose zone.

On June 10, 2009, a soil sample (RP @ 15') was collected from the excavation floor at approximately fifteen (15) feet bgs. The analytical results indicated the benzene concentration was less than the laboratory MDL of 1.086 mg/Kg, the BTEX concentration was 15.568 mg/Kg and the TPH concentration was 1,418 mg/Kg.

On June 10, 2009, two (2) excavation sidewall soil samples (NSW @ 14.5' and SSW @ 14.5') were collected and submitted to the laboratory for analysis. The analytical results indicated benzene concentrations were less than the laboratory MDL of 0.0011 mg/Kg and 0.0019 mg/Kg for soil samples SSW @ 14.5' and NSW @ 14.5', respectively. BTEX concentrations were less than the laboratory MDL of 0.0022 mg/Kg and 0.0165 mg/Kg for soil samples SSW @ 14.5' and NSW @ 14.5', respectively. TPH concentrations were less than the laboratory MDL of 16.7 mg/Kg and 26.1 mg/Kg for soil samples SSW @ 14.5' and NSW @ 14.5', respectively. A baseline stockpile soil sample (Stockpile) was collected from the excavated soil to evaluate the soil and determine its potential use as backfill material. The analytical results indicated the benzene concentration was less than the laboratory MDL of 1.071 mg/Kg, the BTEX concentration was 13.027 mg/Kg and the TPH concentration was 1,344 mg/Kg.

On June 10, 2009, five (5) delineation trenches (West Trench, North Trench #1, North Trench #2, North Trench #2, East Trench #1 and East Trench #2) were excavated to delineate the northern extent of soil impact. A trench (West Trench) was excavated on the northwest corner of the existing excavation to further delineate the release. The West Trench was excavated to a total depth of approximately six (6) feet bgs. A soil sample was collected at six (6) feet bgs and submitted to the laboratory for determination of BTEX and TPH concentrations. The analytical results indicated benzene, BTEX and TPH concentrations were less than the laboratory MDL of 0.0011 mg/Kg, 0.0023 mg/Kg and 16.9 mg/Kg, respectively. The analytical results indicated the West Trench was not impacted by the release.

A delineation trench (North Trench #1) was excavated north of the sixteen (16) and twenty-four (24) inch DCP poly gas lines. North Trench #1 was excavated to a total depth of approximately

fourteen (14) feet bgs. Soil samples were collected and submitted to the laboratory at four (4) feet, eight (8) feet, twelve (12) feet and fourteen (14) feet bgs. The analytical results indicated benzene concentrations were less than the laboratory MDL in each of the soil samples, ranging from less than 0.0012 mg/Kg in soil sample North Trench #1 @ 4' to less than 1.120 mg/Kg in soil sample North Trench #1 @ 14'. BTEX concentrations ranged from less than the laboratory MDL of 0.0023 mg/Kg in soil sample North Trench #1 @ 4' to 29.417 mg/Kg in soil sample North Trench #1 @ 14' and TPH concentrations ranged from less than the laboratory MDL of 17.5 mg/Kg in soil sample North Trench #1 @ 4' to 7,163 mg/Kg in soil sample North Trench #1 @ 14'. Based on the analytical results of soil samples collected from the North Trench #1, delineation was unsuccessful and additional trenches (East Trench #1, East Trench #2 and North Trench #2) were excavated at the north and northeast sides of the release site.

A delineation trench (North Trench #2) was excavated north of the eight (8) inch XTO fiberglass water line. North Trench #2 was excavated to a total depth of approximately eight (8) feet bgs. Soil samples were collected and submitted to the laboratory at four (4) feet and eight (8) feet bgs. The analytical results indicated benzene and BTEX concentrations were less than the laboratory MDL of 0.0011 and 0.0022 mg/Kg in each of the soil samples, respectively. TPH concentrations were less than the laboratory MDL of 15.9 mg/Kg and 16.5 mg/Kg in soil samples North Trench #2 @ 4' and North Trench #2 @ 8', respectively. Based on the analytical results of soil samples collected from the North Trench #2, delineation was successful on the north side of the release site.

A delineation trench (East Trench #1) was excavated east of the North Trench #1 and north of the sixteen (16) and twenty-four (24) inch DCP poly gas lines. East Trench #1 was excavated to a total depth of approximately fourteen (14) feet bgs. Soil samples were collected and submitted to the laboratory at four (4) feet and fourteen (14) feet bgs. The analytical results indicated benzene concentrations were less than the laboratory MDL of 0.0011 mg/Kg and 0.0107 mg/Kg in soil samples East Trench #1 @ 4' and East Trench #1 @ 14', respectively. BTEX concentrations were 0.00 mg/Kg in soil sample East Trench #1 @ 4' and 3.7949 mg/Kg in soil sample East Trench #1 @ 14'. TPH concentrations were less than the laboratory MDL of 16.1 mg/Kg in soil sample East Trench #1 @ 4' and 3,224 mg/Kg in soil sample East Trench #1 @ 14', respectively. Based on the analytical results of soil samples collected from the North Trench #2, delineation was unsuccessful on the northeast side of the release site.

A delineation trench (East Trench #2) was excavated east of East Trench #1 and north of the sixteen (16) and twenty-four (24) inch DCP poly gas lines. East Trench #2 was excavated to a total depth of approximately fourteen (14) feet bgs. Soil samples were collected and submitted to the laboratory at four (4) feet and fourteen (14) feet bgs. The analytical results indicated benzene concentrations were less than the laboratory MDL of 0.0010 mg/Kg and 0.0011 mg/Kg in soil samples East Trench #2 @ 4' and East Trench #2 @ 14', respectively. BTEX concentrations were less than the laboratory MDL of 0.0021 mg/Kg and 0.0022 mg/Kg in soil samples East Trench #1 @ 4' and East Trench #1 @ 14', respectively. TPH concentrations were less than the laboratory MDL of 15.6 mg/Kg and 17.0 mg/Kg in soil samples East Trench #1 @ 4' and East Trench #1 @ 14', respectively. Based on the analytical results of soil samples collected from the East Trench #2, delineation was successful on the northeast side of the release site.

On June 10, 2009, a baseline stockpile soil sample (Stockpile) was collected and submitted to the laboratory. The analytical results indicated the benzene concentration was less than the



laboratory MDL of 1.071 mg/Kg. The BTEX concentration was 13.047 mg/Kg and the TPH concentration was 1,344 mg/Kg.

On June 12, 2009, two (2) excavation sidewall soil samples (WSW @ 14.5' and ESW @ 14.5') were collected and submitted to the laboratory for analysis. The analytical results indicated benzene and BTEX concentrations were less than the appropriate laboratory MDL for each of the submitted soil samples. TPH concentrations were less than the laboratory MDL of 16.7 mg/Kg and 16.9 mg/Kg for soil samples WSW @ 14.5' and ESW @ 14.5', respectively.

The excavation of impacted soil was completed on June 12, 2009. Approximately 1,400 cubic yards (cy) of soil was stockpiled on-site during excavation activities, pending final disposition. The final dimensions of the excavation were approximately seventy (77) feet in width, approximately eighty (80) feet in length and fifteen (15) feet in depth.

Plains maintains the large diameter and line spacing of the DCP poly pipelines located on the northern extent of the release constitutes a health and safety hazard to Plains personnel and contractors working in close proximity to the pipelines. Plains proposes to leave in-situ an area of impacted soil beneath and adjacent to the DCP poly pipelines, measuring approximately thirty-five (35) feet in width and forty (40) feet in length.

The analytical results indicate the excavation sidewalls have been remediated to concentrations less than the NMOCD regulatory standard of 10 mg/Kg benzene, 50 mg/Kg BTEX and 100 mg/Kg TPH.

#### **SUMMARY OF GROUNDWATER INVESTIGATION ACTIVITIES**

On April 15, 2009, a temporary casing was installed in the soil boring (SB-1) to allow a groundwater sample to be collected for analysis. Following the collection of the groundwater sample (SB-1), the temporary casing was removed from the soil boring and the soil boring was plugged with cement and bentonite, as required by the NMOSE.

The analytical results indicated the benzene concentration in the groundwater sample was 1.915 mg/L, the toluene concentration was 2.23 mg/L, the ethyl-benzene concentration was 0.1761 mg/L and the total xylene concentration was 0.45 mg/L. The analytical results indicated benzene and toluene concentrations in the groundwater sample exceed the NMOCD regulatory standards of 0.01 mg/L and 0.75 mg/L, respectively. The chloride concentration was 54.6 mg/L and total dissolved solids (TDS) were 788 mg/L. Table 2 summarizes the Concentrations of Benzene, BTEX, Chloride and Total Dissolved Solids in Groundwater.

On receipt of the analytical results, Plains notified NMOCD representatives at the NMOCD Hobbs District Office and the NMOCD Santa Fe Office of the impact to groundwater at the release site.

#### **PROPOSED REMEDIATION ACTIVITIES**

Plains proposes the following remediation activities designed to progress the DCP Plant to Lea Station 6-Inch Sec 31 release site toward an NMOCD approved closure:

- Plains proposes to collect a stockpile soil sample for each 500 cy of stockpiled soil. The soil samples will be submitted to the laboratory and analyzed for concentrations of BTEX using EPA method 8021b and TPH using SW-846 8015M. Provided the analytical results indicate the benzene, BTEX and TPH concentrations of the soil sample are less than 10 mg/Kg, 50 mg/Kg and 1,000 mg/Kg, respectively, the soil will be stockpiled and used as backfill. Should the analytical results indicate any of the contaminants of concern, of any of the stockpile soil samples exceed the concentrations stated above, the affected soil stockpile will be re-blended and re-sampled until the contaminants of concern are less than the above stated concentrations.
- Plains requests NMOCD approval, to leave in-situ, impacted soil beneath and adjacent to the DCP poly pipelines. The large diameter and line spacing of the DCP poly pipelines constitutes a health and safety hazard to Plains personnel and contractors working in close proximity to the pipelines.
- Upon receipt of New Mexico State Land Office and NMOCD approval, Plains proposes to install a minimum of four (4) monitor wells (MW-1 through MW-4) in an up-gradient, cross-gradient and down-gradient position, as well as, at the release point. Soil samples will be collected at five (5) foot drilling intervals and field screened using a PID. Selected soil samples will be submitted to the laboratory for determination of concentrations of BTEX and TPH using EPA SW-846 8021b and SW-846 8015M, respectively. A Proposed Monitor Well Location Map is provided as Figure 3. Based on the analytical results of the initial groundwater investigation, additional monitor wells may be required to adequately delineate the impact to groundwater at the site.
- Plains proposes to install a twenty (20) mil polyurethane liner in the excavation prior to backfilling. The proposed release point monitor well will be located in the excavation and will be extended to the top of the excavation using a two (2) inch diameter PVC riser pipe with an outer four (4) inch diameter protective casing. The four (4) inch casing will be fitted with a forty (40) mil boot, which will be chemically welded to the twenty (20) mil liner to protect the impermeability of the liner. The liner will be cushioned by a six (6) inch layer of sand above and below the liner to protect the liner from damage during excavation backfilling activities. This engineering control will inhibit vertical migration of the contaminants below the liner, by shedding moisture to the edge of the liner and beyond the horizontal extent of the underlying impacted soil. Following the liner installation, the excavation will be backfilled and compacted in twelve (12) inch lifts. Following backfill activities, the space between the two (2) inch monitor well casing and the four (4) inch casing will be filled with sand. On completion of the backfill activities the surface will be contoured to fit the surrounding topography. Reseeding of the site with vegetation acceptable to the New Mexico State Land Office will take place at the conclusion of the remediation activities.

## REPORTING

On completion of the proposed soil closure activities, Plains will submit a Remediation Summary and Soil Closure Request for NMOCD approval. Groundwater monitoring will

initially be conducted on a monthly frequency and adjusted as required. A 2009 Annual Monitoring Report will be submitted to the NMOCD before April 1, 2010.

## **LIMITATIONS**

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

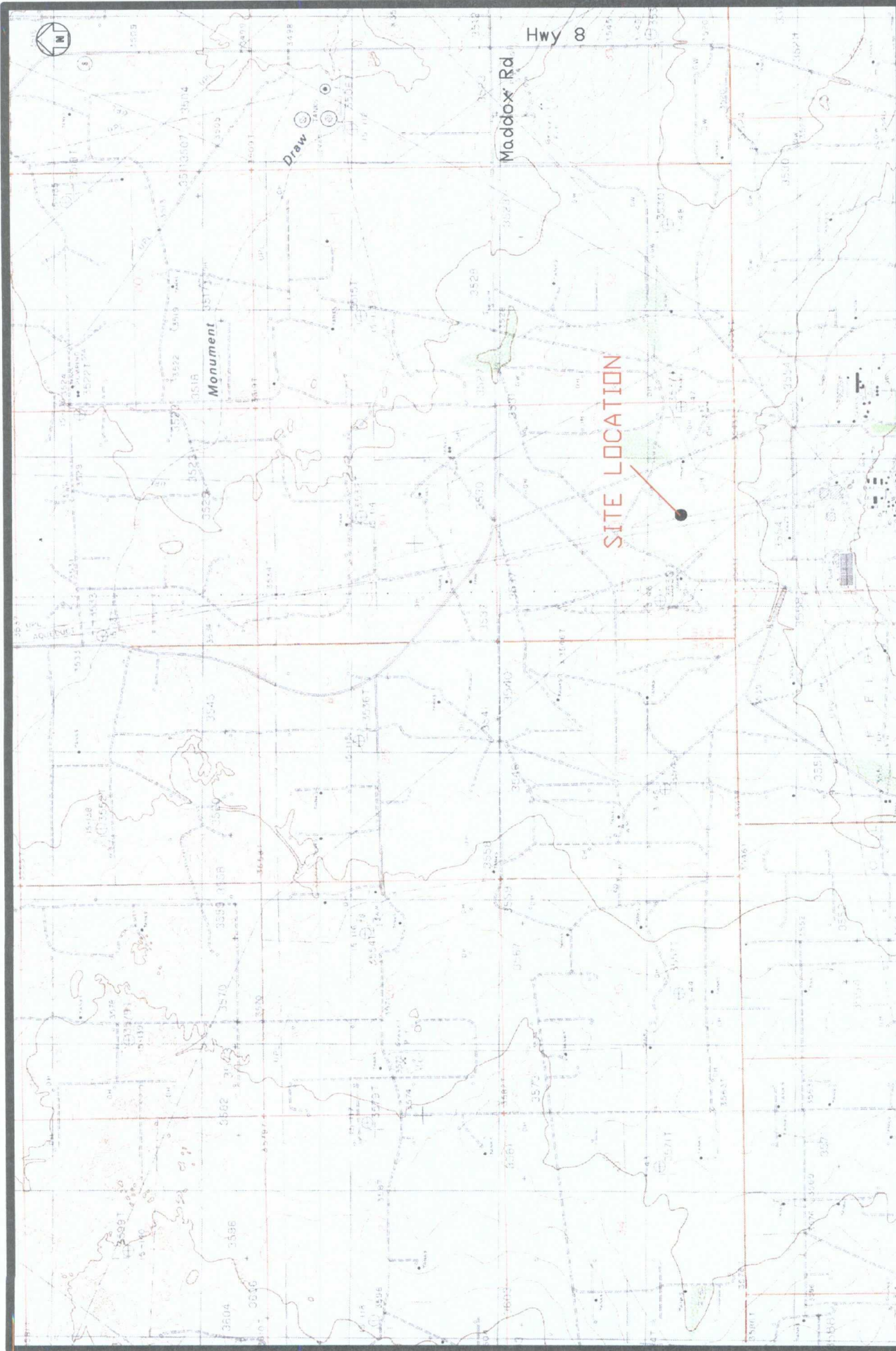
Basin Environmental Consulting, LLC has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. Basin Environmental Consulting, LLC has not conducted an independent examination of the facts contained in referenced materials and statements.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

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

**DISTRIBUTION:**

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## Figures



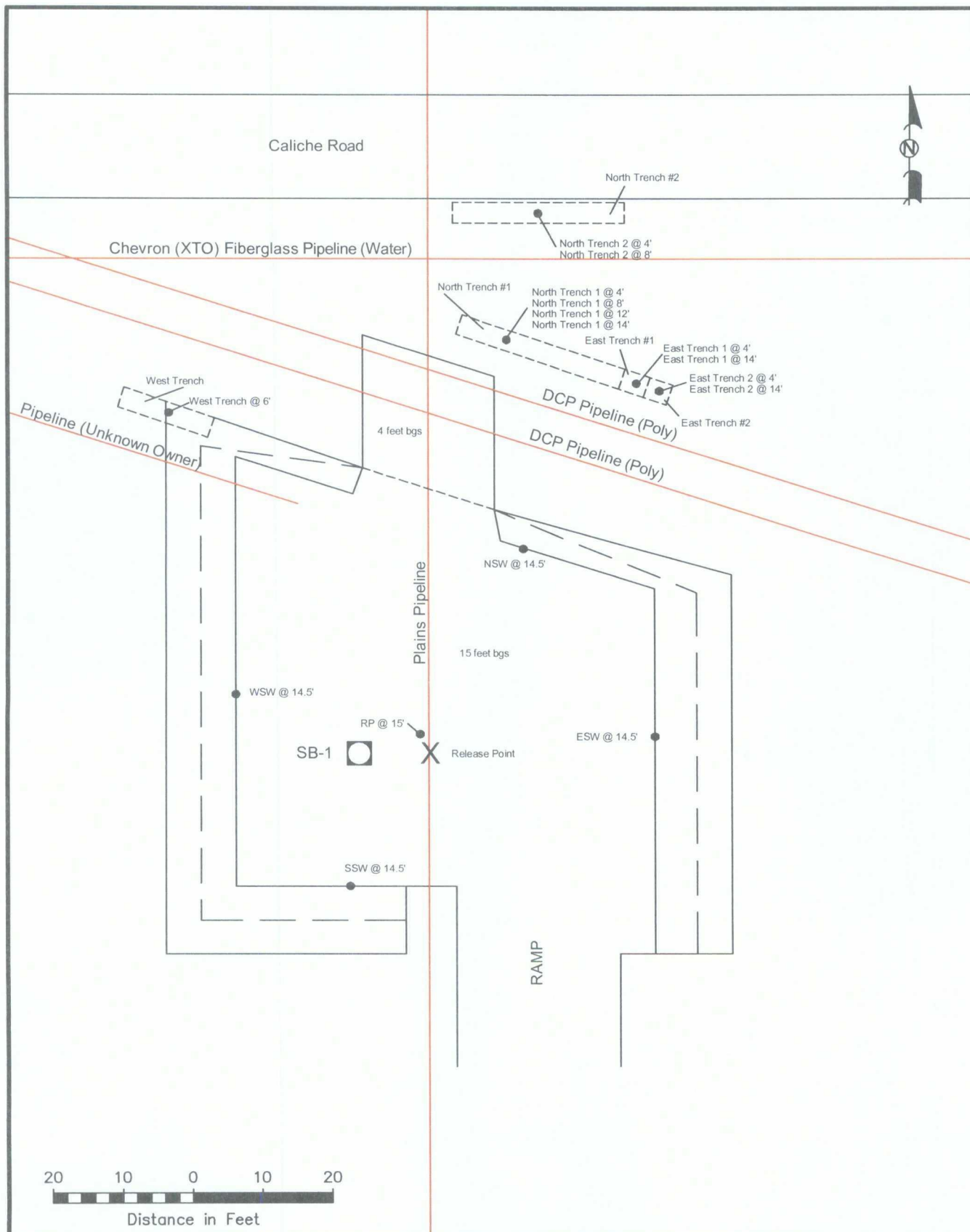
**Figure 1**  
 Site Location Map  
 Plains Pipeline, L.P.  
 DCP Plant to Lea Station 6-Inch Sec 31  
 Lea County, New Mexico  
 SRS 2009-084  
 1RP-2166

# Basin Environmental Services

Prep By: CDS  
 July 20, 2009  
 Checked By: CDS  
 Scale 1"=3000'







**LEGEND:**

- Excavation Extent
- Sample Location
- Pipeline
- Soil Boring

**Figure 2**  
**Site and Sample Location Map**  
**Plains Pipeline, L.P.**  
**DCP Plant to Lea Station 6-Inch - Sec 31**  
**SRS # 2009-084**  
**Lea County, NM**  
**1RP - 2166**

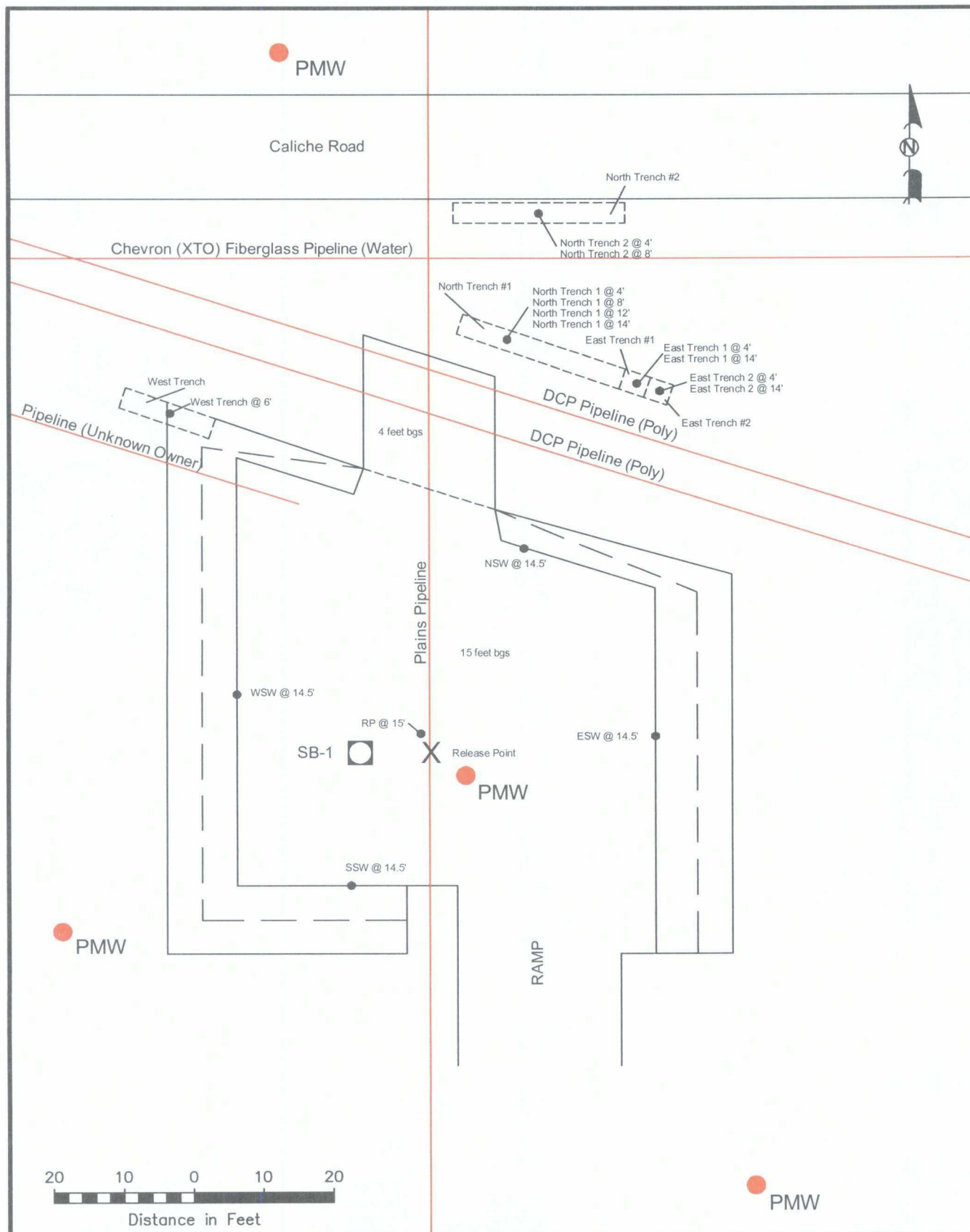
**Basin Environmental Services**

Scale: 1" = 20'

Drawn By: CDS

Prepared By: CDS

June 11, 2009



#### LEGEND:

- Excavation Extent
- Sample Location
- Pipeline
- Proposed Monitor Well Location
- Soil Boring

Figure 3

Proposed Monitor Well Location Map  
 Plains Pipeline, L.P.  
 DCP Plant to Lea Station 6-Inch - Sec 31  
 SRS # 2009-084  
 Lea County, NM  
 1RP - 2166

Basin Environmental Services

Scale: 1" = 20'

Drawn By: CDS

Prepared By: CDS

June 11, 2009



## Tables

TABLE 1

## CONCENTRATIONS OF BENZENE, BTEX AND TPH IN SOIL

PLAINS PIPELINE, L.P.

DCP PLANT TO LEA STATION 6-INCH SECTION 31

LEA COUNTY, NEW MEXICO

SRS: 2009-084

NMOCD REFERENCE NO: 1RP-2166

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)
					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)		
SB-1 @ 10'	10 Feet	04/15/09	04/21/09	In-Situ	0.0017	0.022	0.0368	0.1399	0.0554	0.2556	150	311	33	494	
SB-1 @ 20'	20 Feet	04/15/09	04/21/09	In-Situ	<0.0011	0.0061	0.0301	0.1368	0.0623	0.2353	375	473	58	906	
SB-1 @ 30'	30 Feet	04/15/09	04/21/09	In-Situ	<0.0011	<0.0021	0.0018	0.0084	0.0041	0.0143	205	249	27	481	
SB-1 @ 40'	40 Feet	04/15/09	04/21/09	In-Situ	<0.0507	<0.1013	0.226	1.079	0.4634	1.7683	699	687	93.2	1,479.2	
SB-1 @ 50'	50 Feet	04/15/09	04/21/09	In-Situ	<0.0498	<0.0997	0.2736	1.183	0.4744	1.931	465	481	59.1	1,005.1	
SB-1 @ 60'	60 Feet	04/15/09	04/21/09	In-Situ	<0.0049	<0.0098	<0.0049	<0.0098	<0.0049	<0.0098	20.5	102	<15	122.5	
SB-1 @ 70'	70 Feet	04/15/09	04/21/09	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<15.1	40.6	<15.1	40.6	
SB-1 @ 75'	75 Feet	04/15/09	04/21/09	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<15.1	43.3	<15.1	43.3	
RP @ 15'	15 Feet	06/10/09	06/16/09	In-Situ	<1.086	<2.172	<1.086	13.06	2.508	15.568	809	422	187	1,418	
NSW @ 14.5'	14.5 Feet	06/10/09	06/16/09	In-Situ	0.0019	0.0051	0.0012	0.0083	<0.0011	0.0165	<16.4	26.1	<16.4	26.1	
SSW @ 14.5'	14.5 Feet	06/10/09	06/16/09	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.7	<16.7	<16.7	<16.7	
West Trench @ 6'	6 Feet	06/10/09	06/16/09	In-Situ	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<16.9	<16.9	<16.9	<16.9	
North Trench #1 @ 4'	4 Feet	06/10/09	06/16/09	In-Situ	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0023	<17.5	<17.5	<17.5	<17.5	
North Trench #1 @ 8'	8 Feet	06/10/09	06/16/09	In-Situ	<0.0555	0.1930	1.0090	3.9	3.179	8.281	309	3,780	915	5,004	
North Trench #1 @ 12'	12 Feet	06/10/09	06/16/09	In-Situ	<1.065	4.508	3.918	12.62	5.021	26.067	900	5,920	1,610	8,430	
North Trench #1 @ 14'	14 Feet	06/10/09	06/16/09	In-Situ	<1.120	5.384	4.516	14.36	5.157	29.417	823	4,910	1,430	7,163	
East Trench #1 @ 4'	4 Feet	06/10/09	06/16/09	In-Situ	<0.0011	<0.0021	<0.0011	0.0024	<0.0011	0.0024	<16.1	<16.1	<16.1	<16.1	
East Trench #1 @ 14'	14 Feet	06/10/09	06/16/09	In-Situ	<0.0107	0.054	0.2889	2.033	1.419	3.7949	194	2,430	600	3,224	
North Trench #2 @ 4'	4 Feet	06/10/09	06/16/09	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0022	<15.9	<15.9	<15.9	<15.9	
North Trench #2 @ 8'	8 Feet	06/10/09	06/16/09	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.5	<16.5	<16.5	<16.5	
East Trench #2 @ 4'	4 Feet	06/10/09	06/16/09	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.6	<15.6	<15.6	<15.6	
East Trench #2 @ 14'	14 Feet	06/10/09	06/16/09	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<17.0	<17.0	<17.0	<17.0	
Stockpile	N/A	06/10/09	06/16/09	N/A	<1.071	<2.141	<1.071	10.5	2.527	13.027	485	653	206	1,344	
ESW @ 14.5'	14.5 Feet	06/12/09	06/16/09	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<15.5	16.9	<15.5	16.9	
WSW @ 14.5	14.5 Feet	06/12/09	06/16/09	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.7	<16.7	<16.7	<16.7	
NMOCD Regulatory Standard					10					50				100	

TABLE 2

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

PLAINS PIPELINE, L.P.

DCP PLANT TO LEA STATION 6" SECTION 31

LEA COUNTY, NEW MEXICO

PLAINS SRS NO. 2009-084

NMOCD REFERENCE NO: 1R-2166

SAMPLE LOCATION	SAMPLE DATE	DATE ANALYZED	METHODS: EPA SW 846-8021B, 5030					CHLORIDES (mg/L)	TDS (mg/L)
			BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL-BENZENE (mg/L)	M,P-XYLENES (mg/L)	O-XYLENES (mg/L)		
SB-1	04/16/09	04/17/09	1.915	2.23	0.1761	0.337	0.113	54.6	788
NMOCD CRITERIA			0.01	0.75	0.75	TOTAL XYLENES	0.62	250	10,000

## Appendices

Appendix A  
Soil Boring Logs

# Soil Boring SB-1

## Soil Boring Details

Depth  
Below  
Ground  
Surface

Soil  
Columns

PID  
Reading

Petroleum  
Odor

Petroleum  
Stain

Soil Description

Date Drilled April 15, 2009  
Thickness of Bentonite Seal 85 Ft  
Depth of Exploratory Boring 85 Ft bgs  
Depth to Groundwater 77 Ft bgs  
Ground Water Elevation \_\_\_\_\_

▼ Indicates the PSH level measured on \_\_\_\_\_  
▼ Indicates the groundwater level measured on April 16, 2009  
○ 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  
75  
80  
85



98.5

(1302)

1035

(924)

1068

(1028)

969

(1023)

1454

(1195)

1322

(502)

762

(209)

(189)

65.1

36.1

Slight

None

Moderate

None

Moderate

None

Heavy

None

Heavy

None

Heavy

None

Heavy

None

Heavy

None

Very Heavy

None

Very Heavy

None

Very Heavy

None

Moderate

None

Heavy

None

Moderate

None

Slight

None

Very Slight

None

0 - 13' - Sand, greyish brown, medium grained with some caliche fragments, slight organic odor

13 - 15' - Sand, brown, very fine grained  
15' - 20' - Sand, brown, very fine grained with some caliche fragments

20' - 85' bgs - Sand, brown, very fine grained, moist at 72' bgs

## 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.

Boring Log Details  
Soil Boring SB-1  
DCP Plant to Lea Station 6-Inch Sec 31  
Lea County, New Mexico  
Plains Pipeline, L.P.

Basin Environmental Services

Prep By: CDS  
July 16, 2009

Checked By: CDS

Appendix B  
Analytical Reports

# **Analytical Report 330358**

**for**

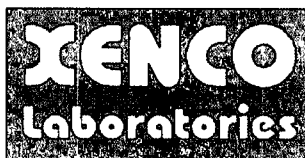
## **PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**DCP Plant to Lea Station 6" - Sec 31**

**2009-0234**

**22-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





22-APR-09

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

Reference: XENCO Report No: **330358**  
**DCP Plant to Lea Station 6" - Sec 31**  
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 330358. 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. 330358 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 330358



PLAINS ALL AMERICAN EH&S, Midland, TX

DCP Plant to Lea Station 6" - Sec 31

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-1 @ 10'	S	Apr-15-09 13:50		330358-001
SB-1 @ 20'	S	Apr-15-09 14:00		330358-002
SB-1 @ 30'	S	Apr-15-09 14:20		330358-003
SB-1 @ 40'	S	Apr-15-09 14:30		330358-004
SB-1 @ 50'	S	Apr-15-09 14:50		330358-005
SB-1 @ 60'	S	Apr-15-09 15:20		330358-006
SB-1 @ 70'	S	Apr-15-09 15:50		330358-007
SB-1 @ 75'	S	Apr-15-09 16:20		330358-008



# Certificate of Analysis Summary 330358

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



Project Id: 2009-0234

Contact: Jason Henry

Project Location: Lea County, NM

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


Report Date: 22-APR-09

Project Manager: Brent Barron, II

Analysis Requested		Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	330358-001	330358-002	330358-003	330358-004	330358-005	330358-006
BTEX by EPA 8021B							SB-1 @ 10'	SB-1 @ 20'	SB-1 @ 30'	SB-1 @ 40'	SB-1 @ 50'	SB-1 @ 60'
							SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
							Apr-15-09 13:50	Apr-15-09 14:00	Apr-15-09 14:20	Apr-15-09 14:30	Apr-15-09 14:50	Apr-15-09 15:20
		Extracted:	Apr-20-09 00:00	Apr-20-09 00:00	Apr-20-09 00:00	Apr-20-09 00:00	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Analyzed:	Apr-21-09 05:17	Apr-21-09 05:37	Apr-21-09 05:58	Apr-21-09 05:58	RL	RL	RL	RL	RL	RL
		Units/RL:	0.0017 0.0010	ND 0.0011	ND 0.0011	ND 0.0011						
			0.0218 0.0021	0.0061 0.0022	ND 0.0021	ND 0.0021						
			0.0368 0.0010	0.0301 0.0011	0.0018 0.0011	0.0018 0.0011						
			0.1399 0.0021	0.1368 0.0022	0.0084 0.0021	0.0084 0.0021						
			0.0534 0.0010	0.0623 0.0011	0.0041 0.0011	0.0041 0.0011						
			0.1933 0.0010	0.1991 0.0011	0.0125 0.0011	0.0125 0.0011						
			0.2556 0.0010	0.2353 0.0011	0.0143 0.0011	0.0143 0.0011						
Total BTEX												
Percent Moisture												
		Extracted:	Apr-17-09 17:00	Apr-17-09 17:00	Apr-17-09 17:00	Apr-17-09 17:00	%	%	%	%	%	%
		Analyzed:	Apr-19-09 14:00	Apr-19-09 14:00	Apr-19-09 14:00	Apr-19-09 14:00	RL	RL	RL	RL	RL	RL
		Units/RL:	4.59 1.00	7.30 1.00	4.83 1.00	4.83 1.00						
TPH By SW8015 Mod												
		Extracted:	Apr-19-09 14:00	Apr-19-09 14:00	Apr-19-09 14:00	Apr-19-09 14:00	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Analyzed:	Apr-20-09 00:03	Apr-20-09 00:28	Apr-20-09 00:53	Apr-20-09 01:18	RL	RL	RL	RL	RL	RL
		Units/RL:	1.50 15.7	375 16.2	205 15.8	699 15.2						
C6-C12 Gasoline Range Hydrocarbons			311 15.7	473 16.2	249 15.8	687 15.2						
C12-C28 Diesel Range Hydrocarbons			32.7 15.7	58.0 16.2	27.0 15.8	93.2 15.2						
C28-C35 Oil Range Hydrocarbons			493.7 15.7	906 16.2	481 15.8	1479.2 15.2						
Total TPH												

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

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

  
Brent Barron  
Odessa Laboratory Director



# Certificate of Analysis Summary 330358

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




Project Id: 2009-0234  
Contact: Jason Henry  
Project Location: Lea County, NM

Project Name: DCP Plant to Lea Station 6" - Sec 31  
Date Received in Lab: Fri Apr-17-09 08:07 am  
Report Date: 22-APR-09  
Project Manager: Brent Barron, II

Analysis Requested		Lab Id:	330358-007	330358-008		
		Field Id:	SB-1 @ 70'	SB-1 @ 75'		
		Depth:				
		Matrix:	SOIL	SOIL		
		Sampled:	Apr-15-09 15:50	Apr-15-09 16:20		
BTEX by EPA 8021B		Extracted:	Apr-20-09 00:00	Apr-20-09 00:00		
		Analyzed:	Apr-21-09 06:18	Apr-21-09 06:39		
		Units/RL:	mg/kg RL	mg/kg RL		
			ND 0.0010	ND 0.0010		
		Benzene	ND 0.0010	ND 0.0010		
		Toluene	ND 0.0020	ND 0.0020		
		Ethylbenzene	ND 0.0010	ND 0.0010		
		m,p-Xylenes	ND 0.0020	ND 0.0020		
		o-Xylene	ND 0.0010	ND 0.0010		
		Total Xylenes	ND 0.0010	ND 0.0010		
		Total BTEX	ND 0.0010	ND 0.0010		
Percent Moisture		Extracted:				
		Analyzed:	Apr-17-09 17:00	Apr-17-09 17:00		
		Units/RL:	% RL	% RL		
		Percent Moisture	ND 1.00	ND 1.00		
TPH By SW8015 Mod		Extracted:	Apr-19-09 15:00	Apr-19-09 15:00		
		Analyzed:	Apr-20-09 06:47	Apr-20-09 07:12		
		Units/RL:	mg/kg RL	mg/kg RL		
			ND 15.1	ND 15.1		
		C6-C12 Gasoline Range Hydrocarbons	ND 15.1	ND 15.1		
		C12-C28 Diesel Range Hydrocarbons	40.6 15.1	43.3 15.1		
		C28-C35 Oil Range Hydrocarbons	ND 15.1	ND 15.1		
		Total TPH	40.6 15.1	43.3 15.1		

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

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Brent Barron  
Odessa Laboratory Director



## Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- 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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2505 North Falkenburg Rd, Tampa, FL 33619  
5757 NW 158th St, Miami Lakes, FL 33014  
12600 West I-20 East, Odessa, TX 79765  
842 Cantwell Lane, Corpus Christi, TX 78408

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(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: DCP Plant to Lea Station 6" - Sec 31

Work Orders : 330358,

Project ID: 2009-0234

Lab Batch #: 756442

Sample: 528575-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/21/09 02:13

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

Lab Batch #: 756442

Sample: 528575-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/21/09 02:34

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

Lab Batch #: 756442

Sample: 528575-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/21/09 03:14

### SURROGATE RECOVERY STUDY

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

Lab Batch #: 756442

Sample: 330358-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/21/09 05:17

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0214	0.0300	71	80-120	*
4-Bromofluorobenzene	0.0563	0.0300	188	80-120	*

Lab Batch #: 756442

Sample: 330358-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/21/09 05:37

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0206	0.0300	69	80-120	*
4-Bromofluorobenzene	0.0663	0.0300	221	80-120	*

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Station 6" - Sec 31

Work Orders : 330358,

Project ID: 2009-0234

Lab Batch #: 756442

Sample: 330358-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/21/09 05:58

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0196	0.0300	65	80-120	*
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

Lab Batch #: 756442

Sample: 330358-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/21/09 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	0.0238	0.0300	79	80-120	*
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 756442

Sample: 330358-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/21/09 06:39

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0230	0.0300	77	80-120	*
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 756442

Sample: 330358-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/21/09 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	0.0227	0.0300	76	80-120	*
4-Bromofluorobenzene	0.0404	0.0300	135	80-120	*

Lab Batch #: 756442

Sample: 330358-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/21/09 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	0.0211	0.0300	70	80-120	*
4-Bromofluorobenzene	0.0380	0.0300	127	80-120	*

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Station 6" - Sec 31

Work Orders : 330358,

Project ID: 2009-0234

Lab Batch #: 756442

Sample: 330355-027 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/21/09 10:25

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0241	0.0300	80	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 756442

Sample: 330355-027 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/21/09 10:45

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0252	0.0300	84	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 756632

Sample: 528674-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/21/09 11:49

### 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	0.0322	0.0300	107	80-120	

Lab Batch #: 756632

Sample: 528674-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/21/09 12:10

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 756632

Sample: 528674-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/21/09 12:51

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0235	0.0300	78	80-120	**
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

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

\*\*\* Poor recoveries due to dilution

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

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





## Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Station 6" - Sec 31

Work Orders : 330358,

Project ID: 2009-0234

Lab Batch #: 756632

Sample: 330358-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/22/09 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	0.0206	0.0300	69	80-120	**
4-Bromofluorobenzene	0.0445	0.0300	148	80-120	**

Lab Batch #: 756632

Sample: 330466-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/22/09 11:18

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0237	0.0300	79	80-120	*
4-Bromofluorobenzene	0.0503	0.0300	168	80-120	*

Lab Batch #: 756632

Sample: 330466-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/22/09 11:39

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0236	0.0300	79	80-120	*
4-Bromofluorobenzene	0.0499	0.0300	166	80-120	*

Lab Batch #: 756285

Sample: 8406396-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/19/09 15:42

### 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	50.3	50.0	101	70-135	

Lab Batch #: 756285

Sample: 8406396-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/19/09 16:07

### 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	52.0	50.0	104	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Station 6" - Sec 31

Work Orders : 330358,

Project ID: 2009-0234

Lab Batch #: 756285

Sample: 8406396-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/19/09 16:32

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	96.7	100	97	70-135	
o-Terphenyl	56.5	50.0	113	70-135	

Lab Batch #: 756285

Sample: 330358-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/09 00:03

### 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	57.8	50.0	116	70-135	

Lab Batch #: 756285

Sample: 330358-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/09 00:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	55.2	50.0	110	70-135	

Lab Batch #: 756285

Sample: 330358-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/09 00:53

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	98.6	100	99	70-135	
o-Terphenyl	55.9	50.0	112	70-135	

Lab Batch #: 756285

Sample: 330358-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/09 01:18

### 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	52.9	50.0	106	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Station 6" - Sec 31

Work Orders : 330358,

Project ID: 2009-0234

Lab Batch #: 756285

Sample: 330355-030 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/09 01:43

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	52.3	50.0	105	70-135	

Lab Batch #: 756285

Sample: 330355-030 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/09 02:09

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	54.6	50.0	109	70-135	

Lab Batch #: 756385

Sample: 8406400-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/20/09 04:41

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	50.2	50.0	100	70-135	

Lab Batch #: 756385

Sample: 8406400-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/20/09 05:06

### 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	51.2	50.0	102	70-135	

Lab Batch #: 756385

Sample: 8406400-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/20/09 05:31

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	95.5	100	96	70-135	
o-Terphenyl	55.3	50.0	111	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Station 6" - Sec 31

Work Orders : 330358,

Project ID: 2009-0234

Lab Batch #: 756385

Sample: 330358-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/09 05:57

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	52.6	50.0	105	70-135	

Lab Batch #: 756385

Sample: 330358-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/09 06:22

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.1	100	98	70-135	
o-Terphenyl	53.7	50.0	107	70-135	

Lab Batch #: 756385

Sample: 330358-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/09 06:47

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	55.3	50.0	111	70-135	

Lab Batch #: 756385

Sample: 330358-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/09 07:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.1	100	97	70-135	
o-Terphenyl	53.9	50.0	108	70-135	

Lab Batch #: 756385

Sample: 330358-008 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/09 13:27

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	50.6	50.0	101	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Station 6" - Sec 31

Work Orders : 330358,

Project ID: 2009-0234

Lab Batch #: 756385

Sample: 330358-008 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/09 13:53

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	51.5	50.0	103	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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

**Project Name: DCP Plant to Lea Station 6" - Sec 31**

**Work Order #: 330358**

**Analyst: ASA**

**Lab Batch ID: 756442**

**Sample: 528575-1-BKS**

**Date Prepared: 04/20/2009**

**Batch #: 1**

**Project ID: 2009-0234**

**Date Analyzed: 04/21/2009**

**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	0.0811	81	0.1	0.0811	81	0	70-130	35	
Toluene		ND	0.1000	0.0769	77	0.1	0.0767	77	0	70-130	35	
Ethylbenzene		ND	0.1000	0.0804	80	0.1	0.0805	81	0	71-129	35	
m,p-Xylenes		ND	0.2000	0.1661	83	0.2	0.1661	83	0	70-135	35	
o-Xylene		ND	0.1000	0.0795	80	0.1	0.0796	80	0	71-133	35	

**Analyst: ASA**

**Lab Batch ID: 756632**

**Sample: 528674-1-BKS**

**Date Prepared: 04/21/2009**

**Batch #: 1**

**Date Analyzed: 04/21/2009**

**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	0.0846	85	0.1	0.0873	87	3	70-130	35	
Toluene		ND	0.1000	0.0801	80	0.1	0.0833	83	4	70-130	35	
Ethylbenzene		ND	0.1000	0.0845	85	0.1	0.0878	88	4	71-129	35	
m,p-Xylenes		ND	0.2000	0.1755	88	0.2	0.1818	91	4	70-135	35	
o-Xylene		ND	0.1000	0.0835	84	0.1	0.0858	86	3	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: DCP Plant to Lea Station 6" - Sec 31

Work Order #: 330358

Analyst: BHW

Lab Batch ID: 756285

Sample: 8406396-1-BKS

Units: mg/kg

Project ID: 2009-0234

Date Analyzed: 04/19/2009

Batch #: 1

Matrix: Solid

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	1040	104	1000	1070	107	3	70-135	35	
		C12-C28 Diesel Range Hydrocarbons	ND	1000	1020	102	1000	1050	105	3	70-135	35	

Analyst: BHW

Lab Batch ID: 756385

Sample: 8406400-1-BKS

Units: mg/kg

Date Prepared: 04/19/2009

Batch #: 1

Date Analyzed: 04/20/2009

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY														
Units: mg/kg	TPH By SW8015 Mod	Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
	C6-C12 Gasoline Range Hydrocarbons		ND	1000	1060	106	1000	1070	107	1	70-135	35		
	C12-C28 Diesel Range Hydrocarbons		ND	1000	1010	101	1000	1040	104	3	70-135	35		

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

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

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

All results are based on MDL and Validated for QC Purposes



# Form 3 - MS / MSD Recoveries



Project Name: DCP Plant to Lea Station 6" - Sec 31

Work Order #: 330358

Lab Batch ID: 756442

Date Analyzed: 04/21/2009

Reporting Units: mg/kg

Project ID: 2009-0234

QC- Sample ID: 330355-027 S

Batch #: 1 Matrix: Soil

Date Prepared: 04/20/2009

Analyst: ASA

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
Reporting Units: mg/kg	BTEX by EPA 8021B  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
		Benzene	ND	0.1293	0.0819	63	0.1293	0.0867	67	6	70-130	35	X
		Toluene	ND	0.1293	0.0752	58	0.1293	0.0790	61	5	70-130	35	X
		Ethylbenzene	ND	0.1293	0.0778	60	0.1293	0.0835	65	7	71-129	35	X
		m,p-Xylenes	ND	0.2587	0.1172	45	0.2587	0.1201	46	2	70-135	35	X
		o-Xylene	ND	0.1293	0.0767	59	0.1293	0.0814	63	6	71-133	35	X

Lab Batch ID: 756632

Date Analyzed: 04/22/2009

Reporting Units: mg/kg

QC- Sample ID: 330466-001 S

Batch #: 1 Matrix: Soil

Date Prepared: 04/21/2009

Analyst: ASA

Reporting Units: mg/kg												
MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
BTEX by EPA 8021B  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
	Benzene	ND	0.1126	0.0617	55	0.1126	0.0627	56	2	70-130	35	X
	Toluene	ND	0.1126	0.0598	53	0.1126	0.0612	54	2	70-130	35	X
	Ethylbenzene	ND	0.1126	0.0652	58	0.1126	0.0662	59	2	71-129	35	X
	m,p-Xylenes	ND	0.2252	0.1341	60	0.2252	0.1364	61	2	70-135	35	X
	o-Xylene	ND	0.1126	0.0587	52	0.1126	0.0604	54	3	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: DCP Plant to Lea Station 6" - Sec 31

Work Order #: 330358

Lab Batch ID: 756285

Date Analyzed: 04/20/2009

Reporting Units: mg/kg

Project ID: 2009-0234

QC- Sample ID: 330355-030 S

Batch #: 1 Matrix: Soil

Date Prepared: 04/19/2009

Analyst: BHW

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1180	1360	115	1180	1410	119	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1180	1330	113	1180	1380	117	4	70-135	35	

Lab Batch ID: 756385

Date Analyzed: 04/20/2009

Reporting Units: mg/kg

QC- Sample ID: 330358-008 S

Batch #: 1 Matrix: Soil

Date Prepared: 04/19/2009

Analyst: BHW

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1010	1140	113	1010	1130	112	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	43.3	1010	1170	112	1010	1170	112	0	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: DCP Plant to Lea Station 6" - Sec 31

Work Order #: 330358

Lab Batch #: 756187

Project ID: 2009-0234

Date Analyzed: 04/17/2009

Date Prepared: 04/17/2009

Analyst: BEV

QC- Sample ID: 330355-021 D

Batch #: 1

Matrix: Soil

Reporting Units: %

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	7.90	7.38	7	20	

Lab Batch #: 756188

Date Analyzed: 04/17/2009

Date Prepared: 04/17/2009

Analyst: BEV

QC- Sample ID: 330358-004 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	1.28	1.10	15	20	

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

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West 1-20 East  
Odessa, Texas 79765  
Phone: 432-563-1800  
Fax: 432-563-1713

Project Name: DCP Plant to Lea Station 6" - Sec 31

Project #: 2009-0234

Project Loc: Lea County, NM

PO #: PAA - J. Henry

Fax No: (575) 396-1429

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

330358

[illegible]

# Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Plains Basin  
 Date/ Time: 04-17-09 0000  
 Lab ID #: 330358  
 Initials: JMF

## Sample Receipt Checklist

				Client Initials
#1	Temperature of container/ cooler?	Yes	No	2.5 °C
#2	Shipping container in good condition?	Yes	No	
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	(Not Present)
#4	Custody Seals intact on sample bottles/ container? / label	Yes	No	Not Present
#5	Chain of Custody present?	Yes	No	
#6	Sample instructions complete of Chain of Custody?	Yes	No	
#7	Chain of Custody signed when relinquished/ received?	Yes	No	
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid
#9	Container label(s) legible and intact?	Yes	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No	
#11	Containers supplied by ELOT?	Yes	No	
#12	Samples in proper container/ bottle?	Yes	No	See Below
#13	Samples properly preserved?	Yes	No	See Below
#14	Sample bottles intact?	Yes	No	
#15	Preservations documented on Chain of Custody?	Yes	No	
#16	Containers documented on Chain of Custody?	Yes	No	
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below
#18	All samples received within sufficient hold time?	Yes	No	See Below
#19	Subcontract of sample(s)?	Yes	No	(Not Applicable)
#20	VOC samples have zero headspace?	Yes	No	Not Applicable

## Variance Documentation

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

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

Corrective Action Taken:

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

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

**Analytical Report 330361**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**DCP Plant to Lea Station 6" - Sec 31**

**2009-0234**

**24-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



24-APR-09

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

Reference: XENCO Report No: **330361**  
**DCP Plant to Lea Station 6" - Sec 31**  
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 330361. 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. 330361 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 330361



PLAINS ALL AMERICAN EH&S, Midland, TX  
DCP Plant to Lea Station 6" - Sec 31

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-1	W	Apr-16-09 10:00		330361-001



# Certificate of Analysis Summary 330361

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



Project Id: 2009-0234

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: DCP Plant to Lea Station 6" - Sec 31

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


Report Date: 24-APR-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:		Field Id:	Depth:	Matrix:	Sampled:	Extracted:	Analyzed:	Units/RL:	mg/L	RL
Anions by EPA 300											
Chloride											
BTEX by EPA 8021B											
Benzene											
Toluene											
Ethylbenzene											
m,p-Xylenes											
o-Xylene											
Total Xylenes											
Total BTEX											
TDS by SM2540C											
Total dissolved solids											

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 - Atlanta - Latin America - Corpus Christi

  
Brent Barron  
Odessa Laboratory Director





## Flagging Criteria



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

\* Outside XENCO's scope of NELAC Accreditation.

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

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



## Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Station 6" - Sec 31

Work Orders : 330361,

Project ID: 2009-0234

Lab Batch #: 756783

Sample: 528751-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 04/22/09 21:43

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

Lab Batch #: 756783

Sample: 528751-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 04/22/09 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	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

Lab Batch #: 756783

Sample: 528751-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 04/22/09 22:44

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0248	0.0300	83	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 756783

Sample: 330361-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 04/23/09 06:16

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0245	0.0300	82	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

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

\*\*\* Poor recoveries due to dilution

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

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



## Blank Spike Recovery



Project Name: DCP Plant to Lea Station 6" - Sec 31

Work Order #: 330361

Project ID:

2009-0234

Lab Batch #: 756413

Sample: 756413-1-BKS

Matrix: Water

Date Analyzed: 04/17/2009

Date Prepared: 04/17/2009

Analyst: LATCOR

Reporting Units: mg/L

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

Anions by EPA 300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	10.2	102	90-110	

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

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



## BS / BSD Recoveries



Project Name: DCP Plant to Lea Station 6" - Sec 31

Work Order #: 330361

Analyst: ASA

Lab Batch ID: 756783

Sample: 528751-1-BKS

Date Prepared: 04/22/2009

Batch #: 1

Project ID: 2009-0234

Date Analyzed: 04/22/2009

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
Units: mg/L													
Analytes	BTEX by EPA 8021B		Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Benzene		ND	0.1000	0.1020	102	0.1	0.1027	103	1	70-125	25	
	Toluene		ND	0.1000	0.0972	97	0.1	0.0974	97	0	70-125	25	
	Ethylbenzene		ND	0.1000	0.1019	102	0.1	0.1021	102	0	71-129	25	
	m,p-Xylenes		ND	0.2000	0.2053	103	0.2	0.2057	103	0	70-131	25	
	o-Xylene		ND	0.1000	0.0955	96	0.1	0.0960	96	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 Recoveries

Project Name: DCP Plant to Lea Station 6" - Sec 31



Work Order #: 330361

Lab Batch #: 756413

Date Analyzed: 04/17/2009

Date Prepared: 04/17/2009

Project ID: 2009-0234

Analyst: LATCOR

QC- Sample ID: 330361-001 S

Batch #: 1

Matrix: Water

Reporting Units: mg/L

Inorganic Anions by EPA 300		MATRIX / MATRIX SPIKE RECOVERY STUDY				
Analytes		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R
Chloride		54.6	100	159	104	80-120

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

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

All Results are based on MDL and Validated for QC Purposes



## Sample Duplicate Recovery



Project Name: DCP Plant to Lea Station 6" - Sec 31

Work Order #: 330361

Lab Batch #: 756413

Project ID: 2009-0234

Date Analyzed: 04/17/2009

Date Prepared: 04/17/2009

Analyst: LATCOR

QC- Sample ID: 330361-001 D

Batch #: 1

Matrix: Water

Reporting Units: mg/L

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	54.6	54.6	0	20	

Lab Batch #: 756504

Date Analyzed: 04/20/2009

Date Prepared: 04/20/2009

Analyst: WRU

QC- Sample ID: 330361-001 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	788	800	2	30	

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

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

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

Project Name: DCP Plant to Lea Station 6" - Sec 31

Company Name	Basin Environmental Service Technologies, LLC
--------------	---

Project Loc: Lea County, NM

PO#: PAA - J. Henry

Print Format: ☒ Standard

3

Print Format: ☒ Standard

3

[illegible]

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

Client: Plains / Basin  
Date/ Time: 04-17-09 @ 0807  
Lab ID #: 330361  
Initials: JMF

**Sample Receipt Checklist**

				Client Initials
#1	Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	25 °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 335116**

**for**

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

**Project Manager: Jason Henry**

**DCP Plant to Lea Station 6-Inch-Sec 31**

**2009-084**

**26-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**



26-JUN-09

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

Reference: XENCO Report No: **335116**  
**DCP Plant to Lea Station 6-Inch-Sec 31**  
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 335116. 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. 335116 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 335116



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

DCP Plant to Lea Station 6-Inch-Sec 31

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
RP @ 15'	S	Jun-10-09 11:30		335116-001
NSW @ 14.5'	S	Jun-10-09 11:50		335116-002
SSW @ 14.5'	S	Jun-10-09 12:10		335116-003
West Trench @ 6'	S	Jun-10-09 12:20		335116-004
North Trench # 1 @ 4'	S	Jun-10-09 12:30		335116-005
North Trench # 1 @ 8'	S	Jun-10-09 12:40		335116-006
North Trench # 1 @ 12'	S	Jun-10-09 12:50		335116-007
North Trench # 1 @ 14'	S	Jun-10-09 13:00		335116-008
East Trench # 1 @ 4'	S	Jun-10-09 13:10		335116-009
East Trench # 1 @ 14'	S	Jun-10-09 13:20		335116-010
North Trench # 2 @ 4'	S	Jun-10-09 13:30		335116-011
North Trench # 2 @ 8'	S	Jun-10-09 13:40		335116-012
East Trench # 2 @ 4'	S	Jun-10-09 13:50		335116-013
East Trench # 2 @ 14'	S	Jun-10-09 14:00		335116-014
Stockpile	S	Jun-10-09 14:10		335116-015



## CASE NARRATIVE

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

**Project Name:** DCP Plant to Lea Station 6-Inch-Sec 31

**Project ID:** 2009-084

**Work Order Number:** 335116

**Report Date:** 26-JUN-09

**Date Received:** 06/11/2009

---

**Sample receipt non conformances and Comments:**

None

---

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

None

**Analytical Non Conformances and Comments:**

Batch: LBA-762045 Percent Moisture

None

Batch: LBA-762047 Percent Moisture

None

Batch: LBA-762052 TPH by SW8015 Mod

None

Batch: LBA-762264 BTEX-MTBE EPA 8021B  
SW8021BM

Batch 762264, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike.

Samples affected are: 335116-005, -004, -011, -009, -013, -014, -012, -003.

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

SW8021BM

Batch 762264, 4-Bromofluorobenzene recovered below QC limits: Data not confirmed by re-analysis. Samples affected are: 531836-1-BLK, 335116-004, 335116-014, 335116-012, 335116-013, 335116-003, 335116-005. Matrix Interference is suspected in sample surrogate failures.

Batch 762264, 4-Bromofluorobenzene recovered above QC limits: Data confirmed by re-analysis. Samples affected are: 335116-006, 335116-010

Batch: LBA-762423 BTEX-MTBE EPA 8021B  
None



# Certificate of Analysis Summary 335116

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: DCP Plant to Lea Station 6-Inch-Sec 31

Project Id: 2009-084

Contact: Jason Henry

Project Location: Lea County, NM



Date Received in Lab: Thu Jun-11-09 08:35 am

Report Date: 26-JUN-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	335116-001	335116-002	335116-003	335116-004	335116-005	335116-006
	Extracted:	Analyzed:	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
BTEX by EPA 8021B	Benzene			ND	1.086	0.0019	0.0011	ND	0.0011	ND	0.0012
	Toluene			ND	2.172	0.0051	0.0022	ND	0.0023	ND	0.0023
	Ethylbenzene			ND	1.086	0.0012	0.0011	ND	0.0011	ND	0.0012
	m,p-Xylenes			13.06	2.172	0.0083	0.0022	ND	0.0023	ND	0.0023
	o-Xylene			2.508	1.086	ND	0.0011	ND	0.0011	ND	0.0012
	Total Xylenes			15.568	1.086	0.0083	0.0011	ND	0.0011	ND	0.0012
Percent Moisture	Total BTEX			15.568	1.086	0.0165	0.0011	ND	0.0011	ND	0.0012
	Extracted:	Analyzed:	Units/RL:	Jun-12-09 08:45	%	RL	%	RL	%	RL	%
TPH By SW8015 Mod	Percent Moisture			7.91	1.00	8.98	1.00	10.16	1.00	11.84	1.00
	Extracted:	Analyzed:	Units/RL:	Jun-11-09 11:32	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg
	C6-C12 Gasoline Range Hydrocarbons			809	81.4	ND	16.4	ND	16.7	ND	17.5
	C12-C28 Diesel Range Hydrocarbons			422	81.4	26.1	16.4	ND	16.7	ND	17.5
	C28-C35 Oil Range Hydrocarbons			187	81.4	ND	16.4	ND	16.7	ND	17.5
	Total TPH			1418	81.4	26.1	16.4	ND	16.7	ND	17.5

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  
Odessa Laboratory Director



# Certificate of Analysis Summary 335116

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: DCP Plant to Lea Station 6-Inch-Sec 31

Project Id: 2009-084

Contact: Jason Henry

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-11-09 08:35 am

Report Date: 26-JUN-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	335116-007	335116-008	335116-009	335116-010	335116-011	335116-012
	Extracted:	Analyzed:	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
BTEx by EPA 8021B	Benzene			ND	1.065	ND	1.120	ND	0.0107	ND	0.0011
	Toluene			4.508	2.130	5.384	2.239	ND	0.0021	ND	0.0022
	Ethylbenzene			3.918	1.065	4.516	1.120	ND	0.0011	ND	0.0011
	m,p-Xylenes			12.62	2.130	14.36	2.239	0.0024	0.0021	ND	0.0022
	o-Xylene			5.021	1.065	5.157	1.120	ND	0.0011	ND	0.0011
	Total Xylenes			17.641	1.065	19.517	1.120	0.0024	0.0011	ND	0.0011
Percent Moisture	Total BTEx			26.067	1.065	29.417	1.120	0.0024	0.0011	ND	0.0011
	Extracted:	Analyzed:	Units/RL:								
TPH By SW8015 Mod	Percent Moisture			6.86	1.00	11.22	1.00	7.58	1.00	6.01	1.00
	Extracted:	Analyzed:	Units/RL:								
	C6-C12 Gasoline Range Hydrocarbons			900	80.4	823	84.5	ND	16.1	ND	16.5
	C12-C28 Diesel Range Hydrocarbons			5920	80.4	4910	84.5	ND	16.1	ND	16.5
	C28-C35 Oil Range Hydrocarbons			1610	80.4	1430	84.5	ND	16.1	ND	16.5
	Total TPH			8430	80.4	7163	84.5	ND	16.1	ND	16.5

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Brent Barron  
Odessa Laboratory Director



# Certificate of Analysis Summary 335116

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



Project Id: 2009-084

Contact: Jason Henry

Project Location: Lea County, NM

Project Name: DCP Plant to Lea Station 6-Inch-Sec 31

Date Received in Lab: Thu Jun-11-09 08:35 am

Report Date: 26-JUN-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	335116-013	335116-014	335116-015	
	Field Id:	East Trench # 2 @ 4'	East Trench # 2 @ 14'	Stockpile	
	Depth:				
	Matrix:	SOIL	SOIL	SOIL	
	Sampled:	Jun-10-09 13:50	Jun-10-09 14:00	Jun-10-09 14:10	
BTEX by EPA 8021B	Extracted:	Jun-12-09 13:00	Jun-12-09 13:00	Jun-15-09 11:00	
	Analyzed:	Jun-13-09 03:14	Jun-13-09 03:35	Jun-16-09 09:54	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	
	Benzene	ND 0.0010	ND 0.0011	ND 1.071	
	Toluene	ND 0.0021	ND 0.0022	ND 2.141	
	Ethylbenzene	ND 0.0010	ND 0.0011	ND 1.071	
	m,p-Xylenes	ND 0.0021	ND 0.0022	10.50 2.141	
	o-Xylene	ND 0.0010	ND 0.0011	2.527 1.071	
	Total Xylenes	ND 0.0010	ND 0.0011	13.027 1.071	
	Total BTEX	ND 0.0010	ND 0.0011	13.027 1.071	
Percent Moisture	Extracted:	Jun-12-09 08:45	Jun-12-09 08:45	Jun-12-09 08:52	
	Analyzed:				
	Units/RL:	% RL	% RL	% RL	
TPH By SW8015 Mod	Percent Moisture	4.00 1.00	11.86 1.00	6.78 1.00	
	Extracted:	Jun-11-09 11:32	Jun-11-09 11:32	Jun-11-09 11:32	
	Analyzed:	Jun-11-09 19:15	Jun-11-09 19:38	Jun-11-09 20:01	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	
	C6-C12 Gasoline Range Hydrocarbons	ND 15.6	ND 17.0	485 80.5	
	C12-C28 Diesel Range Hydrocarbons	ND 15.6	ND 17.0	653 80.5	
	C28-C35 Oil Range Hydrocarbons	ND 15.6	ND 17.0	206 80.5	
	Total TPH	ND 15.6	ND 17.0	1344 80.5	

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Brent Barron  
Odessa Laboratory Director



## Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- 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: DCP Plant to Lea Station 6-Inch-Sec 31

Work Orders : 335116,

Project ID: 2009-084

Lab Batch #: 762264

Sample: 531836-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg	Date Analyzed: 06/12/09 20:47	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0318	0.0300	106	80-120	
4-Bromofluorobenzene		0.0275	0.0300	92	80-120	

Lab Batch #: 762264

Sample: 531836-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg	Date Analyzed: 06/12/09 21:09	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0319	0.0300	106	80-120	
4-Bromofluorobenzene		0.0262	0.0300	87	80-120	

Lab Batch #: 762264

Sample: 531836-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg	Date Analyzed: 06/12/09 21:53	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0274	0.0300	91	80-120	
4-Bromofluorobenzene		0.0166	0.0300	55	80-120	*

Lab Batch #: 762264

Sample: 335116-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg	Date Analyzed: 06/12/09 22:35	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0268	0.0300	89	80-120	
4-Bromofluorobenzene		0.0274	0.0300	91	80-120	

Lab Batch #: 762264

Sample: 335116-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg	Date Analyzed: 06/12/09 22:57	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		0.0229	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] =  $100 * A / B$

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



## Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Station 6-Inch-Sec 31

Work Orders : 335116,

Project ID: 2009-084

Lab Batch #: 762264

Sample: 335116-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/12/09 23:18

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0208	0.0300	69	80-120	*

Lab Batch #: 762264

Sample: 335116-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/12/09 23:40

### 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	0.0183	0.0300	61	80-120	*

Lab Batch #: 762264

Sample: 335116-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/13/09 00:44

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 762264

Sample: 335116-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/13/09 01:27

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0247	0.0300	82	80-120	

Lab Batch #: 762264

Sample: 335116-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/13/09 02:52

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0196	0.0300	65	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: DCP Plant to Lea Station 6-Inch-Sec 31

Work Orders : 335116,

Project ID: 2009-084

Lab Batch #: 762264

Sample: 335116-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/13/09 03:14

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0197	0.0300	66	80-120	*

Lab Batch #: 762264

Sample: 335116-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/13/09 03:35

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0189	0.0300	63	80-120	*

Lab Batch #: 762264

Sample: 335116-005 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/13/09 06:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

Lab Batch #: 762423

Sample: 531911-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/15/09 08:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0251	0.0300	84	80-120	

Lab Batch #: 762423

Sample: 531911-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/15/09 09:19

### 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	0.0242	0.0300	81	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: DCP Plant to Lea Station 6-Inch-Sec 31

Work Orders : 335116,

Project ID: 2009-084

Lab Batch #: 762423

Sample: 531911-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg	Date Analyzed: 06/15/09 10:03	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0286	0.0300	95	80-120
4-Bromofluorobenzene		0.0146	0.0300	49	80-120 **

Lab Batch #: 762423

Sample: 335116-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg	Date Analyzed: 06/16/09 08:06	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0239	0.0300	80	80-120
4-Bromofluorobenzene		0.0637	0.0300	212	80-120 **

Lab Batch #: 762423

Sample: 335116-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg	Date Analyzed: 06/16/09 08:27	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0243	0.0300	81	80-120
4-Bromofluorobenzene		0.1400	0.0300	467	80-120 **

Lab Batch #: 762423

Sample: 335116-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg	Date Analyzed: 06/16/09 08:49	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0250	0.0300	83	80-120
4-Bromofluorobenzene		0.0244	0.0300	81	80-120

Lab Batch #: 762423

Sample: 335116-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg	Date Analyzed: 06/16/09 09:10	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					Flags
1,4-Difluorobenzene		0.0246	0.0300	82	80-120
4-Bromofluorobenzene		0.0257	0.0300	86	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: DCP Plant to Lea Station 6-Inch-Sec 31

Work Orders : 335116,

Project ID: 2009-084

Lab Batch #: 762423

Sample: 335116-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/16/09 09:32

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0245	0.0300	82	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 762423

Sample: 335116-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/16/09 09:54

### 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	0.0243	0.0300	81	80-120	

Lab Batch #: 762423

Sample: 335446-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/16/09 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	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

Lab Batch #: 762423

Sample: 335446-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/16/09 10:58

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0327	0.0300	109	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

Lab Batch #: 762052

Sample: 531713-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/11/09 12:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	77.2	99.9	77	70-135	
o-Terphenyl	35.3	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: DCP Plant to Lea Station 6-Inch-Sec 31

Work Orders : 335116,

Project ID: 2009-084

Lab Batch #: 762052

Sample: 531713-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/11/09 12:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	81.3	100	81	70-135	
o-Terphenyl	35.6	50.0	71	70-135	

Lab Batch #: 762052

Sample: 531713-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/11/09 13:06

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	81.4	100	81	70-135	
o-Terphenyl	41.4	50.0	83	70-135	

Lab Batch #: 762052

Sample: 335116-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 14:15

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	90.8	99.9	91	70-135	
o-Terphenyl	42.4	50.0	85	70-135	

Lab Batch #: 762052

Sample: 335116-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 14:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	85.8	99.5	86	70-135	
o-Terphenyl	40.9	49.8	82	70-135	

Lab Batch #: 762052

Sample: 335116-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 15:02

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	89.6	100	90	70-135	
o-Terphenyl	44.8	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] =  $100 * A / B$

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



## Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Station 6-Inch-Sec 31

Work Orders : 335116,

Project ID: 2009-084

Lab Batch #: 762052

Sample: 335116-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 15:25

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.2	99.6	86	70-135	
o-Terphenyl	41.9	49.8	84	70-135	

Lab Batch #: 762052

Sample: 335116-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 15:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.1	99.6	87	70-135	
o-Terphenyl	43.1	49.8	87	70-135	

Lab Batch #: 762052

Sample: 335116-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 16:11

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.9	99.5	98	70-135	
o-Terphenyl	42.7	49.8	86	70-135	

Lab Batch #: 762052

Sample: 335116-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 16:34

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.8	118	70-135	
o-Terphenyl	46.5	49.9	93	70-135	

Lab Batch #: 762052

Sample: 335116-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 16:57

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	100	106	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] =  $100 * A / B$

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



## Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Station 6-Inch-Sec 31

Work Orders : 335116,

Project ID: 2009-084

Lab Batch #: 762052

Sample: 335116-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 17:43

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	81.3	99.5	82	70-135	
o-Terphenyl	41.8	49.8	84	70-135	

Lab Batch #: 762052

Sample: 335116-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 18:06

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	95.8	100	96	70-135	
o-Terphenyl	44.4	50.0	89	70-135	

Lab Batch #: 762052

Sample: 335116-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 18:29

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	90.5	99.8	91	70-135	
o-Terphenyl	45.9	49.9	92	70-135	

Lab Batch #: 762052

Sample: 335116-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 18:52

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	85.7	99.6	86	70-135	
o-Terphenyl	41.9	49.8	84	70-135	

Lab Batch #: 762052

Sample: 335116-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 19:15

### 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	99.8	85	70-135	
o-Terphenyl	41.0	49.9	82	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## Form 2 - Surrogate Recoveries

Project Name: DCP Plant to Lea Station 6-Inch-Sec 31

Work Orders : 335116,

Project ID: 2009-084

Lab Batch #: 762052

Sample: 335116-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 19:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.5	99.9	87	70-135	
o-Terphenyl	41.6	50.0	83	70-135	

Lab Batch #: 762052

Sample: 335116-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 20:01

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.6	100	88	70-135	
o-Terphenyl	41.6	50.0	83	70-135	

Lab Batch #: 762052

Sample: 335099-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 21:31

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	41.1	50.0	82	70-135	

Lab Batch #: 762052

Sample: 335099-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/11/09 21:54

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.1	100	95	70-135	
o-Terphenyl	41.6	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.



## BS / BSD Recoveries



Project Name: DCP Plant to Lea Station 6-Inch-Sec 31

Work Order #: 335116

Analyst: ASA

Lab Batch ID: 762264

Sample: 531836-1-BKS

Units: mg/kg

Date Prepared: 06/12/2009

Batch #: 1

Project ID: 2009-084

Date Analyzed: 06/12/2009

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
Units: mg/kg												
BTEX by EPA 8021B		Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes												
Benzene		ND	0.1000	0.0919	92	0.1	0.0932	93	1	70-130	35	
Toluene		ND	0.1000	0.0894	89	0.1	0.0907	91	1	70-130	35	
Ethylbenzene		ND	0.1000	0.0935	94	0.1	0.0943	94	1	71-129	35	
m,p-Xylenes		ND	0.2000	0.1889	94	0.2	0.1900	95	1	70-135	35	
o-Xylene		ND	0.1000	0.0903	90	0.1	0.0901	90	0	71-133	35	

Analyst: ASA

Lab Batch ID: 762423

Sample: 531911-1-BKS

Units: mg/kg

Date Prepared: 06/15/2009

Batch #: 1

Date Analyzed: 06/15/2009

Matrix: Solid

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	0.1144	114	0.1	0.1077	108	6	70-130	35	
Toluene		ND	0.1000	0.1103	110	0.1	0.1039	104	6	70-130	35	
Ethylbenzene		ND	0.1000	0.1125	113	0.1	0.1065	107	5	71-129	35	
m,p-Xylenes		ND	0.2000	0.2279	114	0.2	0.2154	108	6	70-135	35	
o-Xylene		ND	0.1000	0.1068	107	0.1	0.1007	101	6	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: DCP Plant to Lea Station 6-Inch-Sec 31

Work Order #: 335116

Analyst: BHW

Lab Batch ID: 762052

Sample: 531713-1-BKS

Date Prepared: 06/11/2009

Batch #: 1

Project ID: 2009-084

Date Analyzed: 06/11/2009

Matrix: Solid

Units: mg/kg

BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
TPH By SW8015 Mod		Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		C6-C12 Gasoline Range Hydrocarbons	ND	999	704	70	1000	71	1	70-135	35	
		C12-C28 Diesel Range Hydrocarbons	ND	999	811	81	1000	82	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: DCP Plant to Lea Station 6-Inch-Sec 31

Work Order #: 335116

Lab Batch #: 762264

Date Analyzed: 06/13/2009

Date Prepared: 06/12/2009

Project ID: 2009-084

Analyst: ASA

QC- Sample ID: 335116-005 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

## MATRIX / MATRIX SPIKE RECOVERY STUDY

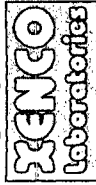
BTEX by EPA 8021B  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Benzene	ND	0.1168	0.0688	59	70-130	X
Toluene	ND	0.1168	0.0278	24	70-130	X
Ethylbenzene	ND	0.1168	0.0396	34	71-129	X
m,p-Xylenes	ND	0.2335	0.0220	9	70-135	X
o-Xylene	ND	0.1168	0.0684	59	71-133	X

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

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

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - MS / MSD Recoveries



Project Name: DCP Plant to Lea Station 6-Inch-Sec 31

Work Order #: 3351116

Lab Batch ID: 762423

Date Analyzed: 06/16/2009

Reporting Units: mg/kg

Project ID: 2009-084

QC- Sample ID: 335446-002 S

Batch #: 1 Matrix: Soil

Date Prepared: 06/15/2009

Analyst: ASA

Reporting Units: mg/kg												
Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
	Benzene	ND	0.1061	0.0913	86	0.1061	0.0927	87	2	70-130	35	
	Toluene	ND	0.1061	0.0821	77	0.1061	0.0807	76	2	70-130	35	
	Ethylbenzene	ND	0.1061	0.0787	74	0.1061	0.0737	69	7	71-129	35	X
	m,p-Xylenes	ND	0.2122	0.1538	72	0.2122	0.1441	68	7	70-135	35	X
	o-Xylene	ND	0.1061	0.0733	69	0.1061	0.0711	67	3	71-133	35	X

Lab Batch ID: 762052

Date Analyzed: 06/11/2009

Reporting Units: mg/kg

QC- Sample ID: 335099-001 S

Batch #: 1 Matrix: Soil

Date Prepared: 06/11/2009

Analyst: BHW

Reporting Units: mg/kg											
MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	ND	1140	927	81	1140	909	80	2	70-135	35	
	ND	1140	1160	102	1140	1160	102	0	70-135	35	
C6-C12 Gasoline Range Hydrocarbons											
C12-C28 Diesel Range Hydrocarbons											

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

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

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

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



## Sample Duplicate Recovery



Project Name: DCP Plant to Lea Station 6-Inch-Sec 31

Work Order #: 335116

Lab Batch #: 762045

Project ID: 2009-084

Date Analyzed: 06/12/2009

Date Prepared: 06/12/2009

Analyst: BEV

QC- Sample ID: 335099-001 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	12.5	12.7	1	20	

Lab Batch #: 762047

Date Analyzed: 06/12/2009

Date Prepared: 06/12/2009

Analyst: BEV

QC- Sample ID: 335116-015 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	6.78	7.42	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 L-20 East  
Odessa, Texas 79765  
Phone: 432-563-1800  
Fax: 432-563-1713

Project Manager: Camille Bryant  
Company Name: Basin Environmental Services Technologies, LLC  
Company Address: 2800 Plaine Hwy  
City/State/Zip: Lufkin, NM 88280  
Telephone No: (505) 665-7210  
Fax No: (505) 395-1429  
Sampler Signature: *Camille Bryant*  
e-mail: *cbryant@basin-consulting.com*  
Project Name: DCP Plant to Lea Station 6-Inch - Sec 31  
Project #: 2009-084  
Project Loc: Lea County, NM  
PO #: PAA - J. Henry  
Report Format: ☒ Standard ☐ TRRP ☐ NPDES

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Total # of Containers	Preservation & # of Containers	Matrix	Analysis For:
01	RP @ 15'			8/10/2009	1130	1	Soil	Soil	Standard TAT
02	NSW @ 14.5'			8/10/2009	1150	1	Soil	Soil	RUSH TAT (Pre-shipment) 20, 40, 60, 72 hrs
03	SSW @ 14.5'			8/10/2009	1210	1	Soil	Soil	Chlorides E 300
04	West Trench @ 8'			8/10/2009	1220	1	Soil	Soil	EPA Part 19 Test
05	North Trench #1 @ 4'			8/10/2009	1230	1	Soil	Soil	PAH
06	North Trench #1 @ 8'			8/10/2009	1240	1	Soil	Soil	H.O.M.
07	North Trench #1 @ 12'			8/10/2009	1250	1	Soil	Soil	NI
08	North Trench #1 @ 14'			8/10/2009	1300	1	Soil	Soil	OTC 8021 8022 8023 or BTEX 6000
09	East Trench #1 @ 4'			8/10/2009	1310	1	Soil	Soil	Derivatives
10	East Trench #1 @ 14'			8/10/2009	1320	1	Soil	Soil	Volatiles
Special Instructions:									Metals: As, Pb, Ba, Cd, Cr, Fe, Hg, Se
Total # of Containers									BAR/ESR/CEC
Total # of Containers									Acetone (CL, SOL, Analysis)
Total # of Containers									Distillate (CL, SOL, Analysis)
Total # of Containers									THF: TX 1000 TX 1008
Total # of Containers									TPH: 418 (BTEX) 419 (BTEX) 420 (BTEX)
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**CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST**  
12600 West 1-20 East  
Odessa, Texas 79786  
Phone: 432-663-1800  
Fax: 432-663-1713

Telephone No: (575) 805-7210  
 Sampler Signature: *Amelia R. Babin*  
 Fax No: (505) 398-1420  
 e-mail: [cborvent@basin-consulting.com](mailto:cborvent@basin-consulting.com)  
 Report: \_\_\_\_\_

[illegible]



# Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin/Plains  
 Date/ Time: 06/11/09 8:35  
 Lab ID #: 335116  
 Initials: QJLBY

## Sample Receipt Checklist

				Client Initials
#1	Temperature of container/ cooler?	<u>Yes</u>	No	<u>2.6</u> °C
#2	Shipping container in good condition?	<u>Yes</u>	No	
#3	Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	<u>Not Present</u>
#4	Custody Seals intact on sample bottles/ container?	<u>Yes</u>	No	Not Present
#5	Chain of Custody present?	<u>Yes</u>	No	
#6	Sample instructions complete of Chain of Custody?	<u>Yes</u>	No	
#7	Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No	
#8	Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont / Lid
#9	Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No	
#11	Containers supplied by ELOT?	<u>Yes</u>	No	
#12	Samples in proper container/ bottle?	<u>Yes</u>	No	See Below
#13	Samples properly preserved?	<u>Yes</u>	No	See Below
#14	Sample bottles intact?	<u>Yes</u>	No	
#15	Preservations documented on Chain of Custody?	<u>Yes</u>	No	
#16	Containers documented on Chain of Custody?	<u>Yes</u>	No	
#17	Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below
#18	All samples received within sufficient hold time?	<u>Yes</u>	No	See Below
#19	Subcontract of sample(s)?	<u>Yes</u>	No	<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 335449**

**for**

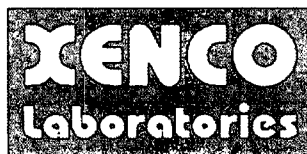
## **PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**DCP Plant to Lea Station-Sec 31**

**2009-084**

**17-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**



17-JUN-09

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

Reference: XENCO Report No: **335449**  
**DCP Plant to Lea Station-Sec 31**  
Project Address: E of Eunice, 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 335449. 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. 335449 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 335449



PLAINS ALL AMERICAN EH&S, Midland, TX

DCP Plant to Lea Station-Sec 31

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
ESW @ 14.5'	S	Jun-12-09 11:05	14.5 ft	335449-001
WSW @ 14.5'	S	Jun-12-09 11:10	14.5 ft	335449-002



## CASE NARRATIVE

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

**Project Name:** DCP Plant to Lea Station-Sec 31

**Project ID:** 2009-084

**Work Order Number:** 335449

**Report Date:** 17-JUN-09

**Date Received:** 06/12/2009

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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-762328 Percent Moisture

None

Batch: LBA-762422 TX1005

None

Batch: LBA-762511 BTEX-MTBE EPA 8021B

SW8021BM

Batch 762511, 4-Bromofluorobenzene recovered below QC limits; Data not confirmed by re-analysis. Samples affected are: 531972-1-BLK, 335449-002, 335449-001. Sample surrogate failures due to Matrix interference.



**Certificate of Analysis Summary 335449**  
**PLAINS ALL AMERICAN EH&S, Midland, TX**



Project Id: 2009-084  
Contact: Jason Henry  
Project Location: E of Eunice, NM

Date Received in Lab: Fri Jun-12-09 04:15 pm

Report Date: 17-JUN-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	335449-001	335449-002	
	Field Id:	ESW @ 14.5'	WSW @ 14.5'	
	Depth:	14.5- ft	14.5- ft	
	Matrix:	SOIL	SOIL	
	Sampled:	Jun-12-09 11:05	Jun-12-09 11:10	
BTEX by EPA 8021B	Extracted:	Jun-15-09 17:00	Jun-15-09 17:00	
	Analyzed:	Jun-16-09 13:50	Jun-16-09 14:11	
	Units/RL:	mg/kg RL	mg/kg RL	
	Benzene	ND 0.0010	ND 0.0011	
	Toluene	ND 0.0020	ND 0.0022	
Ethylbenzene		ND 0.0010	ND 0.0011	
m,p-Xylenes		ND 0.0020	ND 0.0022	
o-Xylene		ND 0.0010	ND 0.0011	
Total Xylenes		ND 0.0010	ND 0.0011	
Total BTEX		ND 0.0010	ND 0.0011	
Percent Moisture	Extracted:			
	Analyzed:	Jun-16-09 08:47	Jun-16-09 08:47	
	Units/RL:	% RL	% RL	
Percent Moisture		3.03 1.00	10.19 1.00	
TPH By SW8015 Mod	Extracted:	Jun-15-09 13:01	Jun-15-09 13:01	
	Analyzed:	Jun-15-09 21:08	Jun-15-09 21:33	
	Units/RL:	mg/kg RL	mg/kg RL	
	C6-C12 Gasoline Range Hydrocarbons	ND 15.5	ND 16.7	
	C12-C28 Diesel Range Hydrocarbons	16.9 15.5	ND 16.7	
C28-C35 Oil Range Hydrocarbons		ND 15.5	ND 16.7	
Total TPH		16.9 15.5	ND 16.7	

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

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

  
Brent Barron  
Odessa Laboratory Director



## Flagging Criteria



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

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5332 Blackberry Drive, San Antonio TX 78238  
2505 North Falkenburg Rd, Tampa, FL 33619  
5757 NW 158th St, Miami Lakes, FL 33014  
12600 West I-20 East, Odessa, TX 79765  
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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: DCP Plant to Lea Station-Sec 31

Work Orders : 335449,

Project ID: 2009-084

Lab Batch #: 762511

Sample: 531972-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/16/09 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	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

Lab Batch #: 762511

Sample: 531972-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/16/09 12:02

### 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	0.0251	0.0300	84	80-120	

Lab Batch #: 762511

Sample: 531972-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/16/09 12:45

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0146	0.0300	49	80-120	*

Lab Batch #: 762511

Sample: 335449-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/16/09 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	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0175	0.0300	58	80-120	*

Lab Batch #: 762511

Sample: 335449-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/16/09 14:11

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0159	0.0300	53	80-120	*

\* Surrogate outside of Laboratory QC limits

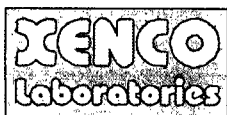
\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* 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: DCP Plant to Lea Station-Sec 31

Work Orders : 335449,

Project ID: 2009-084

Lab Batch #: 762511

Sample: 335322-007 S / MS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/16/09 21:59

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 762511

Sample: 335322-007 SD / MSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/16/09 22:21

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 762422

Sample: 531914-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/15/09 16:54

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	98.2	100	98	70-135	
o-Terphenyl	39.8	50.0	80	70-135	

Lab Batch #: 762422

Sample: 531914-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/15/09 17:20

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	97.3	100	97	70-135	
o-Terphenyl	39.3	50.0	79	70-135	

Lab Batch #: 762422

Sample: 531914-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/15/09 17:45

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	87.1	100	87	70-135	
o-Terphenyl	44.3	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: DCP Plant to Lea Station-Sec 31

Work Orders : 335449,

Project ID: 2009-084

Lab Batch #: 762422

Sample: 335449-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/15/09 21:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.5	100	93	70-135	
o-Terphenyl	46.5	50.0	93	70-135	

Lab Batch #: 762422

Sample: 335449-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/15/09 21:33

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.6	100	98	70-135	
o-Terphenyl	49.5	50.0	99	70-135	

Lab Batch #: 762422

Sample: 335446-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/15/09 22:22

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.7	105	70-135	
o-Terphenyl	41.9	49.9	84	70-135	

Lab Batch #: 762422

Sample: 335446-003 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/15/09 22:47

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.8	109	70-135	
o-Terphenyl	45.7	49.9	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.



## BS / BSD Recoveries



Project Name: DCP Plant to Lea Station-Sec 31

Work Order #: 335449

Analyst: ASA

Lab Batch ID: 762511

Sample: 531972-1-BKS

Units: mg/kg

Date Prepared: 06/15/2009

Batch #: 1

Project ID: 2009-084

Date Analyzed: 06/16/2009

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
Units: mg/kg												
Analytes	BTEX by EPA 8021B											
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
	Benzene	ND	0.1000	0.1102	110	0.1	0.1069	107	3	70-130	35	
	Toluene	ND	0.1000	0.1068	107	0.1	0.1032	103	3	70-130	35	
	Ethylbenzene	ND	0.1000	0.1114	111	0.1	0.1077	108	3	71-129	35	
	m,p-Xylenes	ND	0.2000	0.2247	112	0.2	0.2169	108	4	70-135	35	
	o-Xylene	ND	0.1000	0.1067	107	0.1	0.1029	103	4	71-133	35	

Analyst: BHW

Lab Batch ID: 762422

Sample: 531914-1-BKS

Date Prepared: 06/15/2009

Batch #: 1

Date Analyzed: 06/15/2009

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/kg											
Analytes	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
C6-C12 Gasoline Range Hydrocarbons	ND	1000	867	87	1000	862	86	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1050	105	1000	1030	103	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: DCP Plant to Lea Station-Sec 31

Work Order #: 335449

Lab Batch ID: 762511

Date Analyzed: 06/16/2009

Reporting Units: mg/kg

Project ID: 2009-084

QC- Sample ID: 335322-007 S

Date Prepared: 06/15/2009

Batch #: 1 Matrix: Solid

Analyst: ASA

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
Reporting Units: mg/kg												
BTEX by EPA 8021B		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes												
	Benzene	ND	0.1208	0.1118	93	0.1208	0.1119	93	0	70-130	35	
	Toluene	ND	0.1208	0.1090	90	0.1208	0.1087	90	0	70-130	35	
	Ethylbenzene	ND	0.1208	0.1151	95	0.1208	0.1140	94	1	71-129	35	
	m,p-Xylenes	ND	0.2416	0.2315	96	0.2416	0.2299	95	1	70-135	35	
	o-Xylene	ND	0.1208	0.1081	89	0.1208	0.1078	89	0	71-133	35	

Lab Batch ID: 762422

Date Analyzed: 06/15/2009

Reporting Units: mg/kg

QC- Sample ID: 335446-003 S

Date Prepared: 06/15/2009

Batch #: 1 Matrix: Soil

Analyst: BHW

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
Reporting Units: mg/kg	TPH By SW8015 Mod  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
	C6-C12 Gasoline Range Hydrocarbons	ND	1020	953	93	1030	979	95	3	70-135	35		
	C12-C28 Diesel Range Hydrocarbons	ND	1020	1220	120	1030	1190	116	2	70-135	35		

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

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

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



## Sample Duplicate Recovery



Project Name: DCP Plant to Lea Station-Sec 31

Work Order #: 335449

Lab Batch #: 762328

Project ID: 2009-084

Date Analyzed: 06/16/2009

Date Prepared: 06/16/2009

Analyst: BEV

QC- Sample ID: 335446-001 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	19.0	19.3	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**  
Variance/ Corrective Action Report- Sample Log-In

Client: Bosco / Plains  
Date/ Time: 6-17-09 16:15  
Lab ID #: 335449  
Initials: AL

**Sample Receipt Checklist**

				Client Initials	
#1	Temperature of container/ cooler?	(Yes)	No	1.1	°C
#2	Shipping container in good condition?	(Yes)	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	(Yes)	No	Not Present	
#5	Chain of Custody present?	(Yes)	No		
#6	Sample instructions complete of Chain of Custody?	(Yes)	No		
#7	Chain of Custody signed when relinquished/ received?	(Yes)	No		
#8	Chain of Custody agrees with sample label(s)?	(Yes)	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	(Yes)	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	(Yes)	No		
#11	Containers supplied by ELDT?	(Yes)	No		
#12	Samples in proper container/ bottle?	(Yes)	No	See Below	
#13	Samples properly preserved?	(Yes)	No	See Below	
#14	Sample bottles intact?	(Yes)	No		
#15	Preservations documented on Chain of Custody?	(Yes)	No		
#16	Containers documented on Chain of Custody?	(Yes)	No		
#17	Sufficient sample amount for indicated test(s)?	(Yes)	No	See Below	
#18	All samples received within sufficient hold time?	(Yes)	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	Not Applicable	
#20	VOC samples have zero headspace?	(Yes)	No	Not Applicable	

**Variance Documentation**

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

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

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

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

## Appendix C

### Photographs





DCP Plant to Lea Station 6-Inch Sec 31 release site initial response activities



DCP Plant to Lea Station 6-Inch Sec 31 release site northern extent  
(DCP Polylines left to right, Plains Pipeline top to bottom)





DCP Plant to Lea Station 6-Inch Sec 31 release site northern extent (looking east)



DCP Plant to Lea Station 6-Inch Sec 31 release site excavation (looking northeast)

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

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

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

RECEIVED

APR 29 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	DCP Plant to Lea Station 6-inch Sec. 31	Facility Type	Pipeline

Surface Owner	NM SLO	Mineral Owner		Lease No.	
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LOCATION OF RELEASE

NORMALLY WELL API # 30-025-06300-00-00

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	31	20S	37E					Lea

Latitude N 32.52733° Longitude W 103.2906°

NATURE OF RELEASE

Type of Release	Crude Oil	Volume of Release	20 bbls	Volume Recovered	0 bbls
Source of Release	6" Steel Pipeline	Date and Hour of Occurrence	Unknown	Date and Hour of Discovery	04/02/2009 15:00
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? on 04/29/2009 Larry Johnson (initial estimate = 2-3 bbls based on small surface stain)			
By Whom?	Jason Henry	Date and Hour	04/29/2009 @ 09:00 (revised to reportable on 04/29/2009)		
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.\*

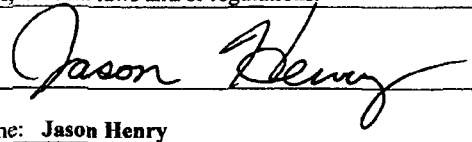
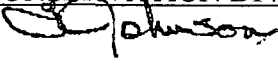
Describe Cause of Problem and Remedial Action Taken.\*

External corrosion of 6" inch pipeline caused a release of crude oil. A clamp was installed on the pipeline to mitigate the release. Throughput for the subject line is 660 bbls/day and the operating pressure of the pipeline is 45 psi. 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 65.

Describe Area Affected and Cleanup Action Taken.\*

The released crude resulted in a surface stain that measured approximately 6' x 8'. 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 Superintendent  ENVIRONMENTAL ENGINEER		
Title: Remediation Coordinator	Approval Date: 4.29.09	Expiration Date: 6.29.09	
E-mail Address: jhenry@paalp.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 04/29/2009 Phone: (575) 441-1099			IRP# 09.4.2166

\* Attach Additional Sheets If Necessary

FGRL0912057827