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2015 ANNUAL MONITORING REPORT

14-INCH VAC TO JAL LEGACY Lea County, New Mexico Plains SRS # 2009-092 UNIT LTR "F" (SE/NW), Section 25, Township 25 South, Range 37 East Latitude 32° 06' 10.7" North, Longitude 103° 07' 10.3" West NMOCD Reference # 1RP-2162

Prepared For:



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Prepared By:

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Ben J. Arguijo Project Manager

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1.0 INTRODUCTION

Basin Environmental Service Technologies, LLC (Basin Environmental), on behalf of Plains All American Pipeline, LP (Plains), is pleased to submit this *Annual Monitoring Report* in compliance with the New Mexico Oil Conservation Division (NMOCD) letter of May 1998, requiring submittal of an Annual Monitoring Report by April 1st of each year. This report is intended to be viewed as a complete document with text, figures, tables, and appendices. This report presents the results of the quarterly groundwater monitoring events conducted in calendar year 2015 only. For reference, a "Site Location Map" is provided as Figure 1.

2.0 SITE DESCRIPTION & BACKGROUND INFORMATION

The legal description of the 14-Inch Vac to Jal Legacy release site is Unit Letter "F" (SE/NW), Section 25, Township 25 South, Range 37 East, in Lea County, New Mexico. The geographic coordinates of the release site are 32° 06' 10.7" North latitude and 103° 07' 10.3" West longitude.

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

On April 9, 2009, following initial response activities, excavation of hydrocarbon-impacted soil commenced at the site. To facilitate remediation activities, the excavation was divided into two (2) sections: Main Excavation and West Excavation. Excavated soil was stockpiled on-site on a plastic liner to mitigate the potential leaching of contaminants into the vadose zone. Approximately eighteen thousand cubic yards (18,000 yd³) of impacted soil was excavated and stockpiled on-site during excavation activities. Final dimensions of the Main Excavation were approximately four hundred feet (400') in length, approximately two hundred feet (200') in width, and five feet (5') to fourteen feet (14') in depth. Final dimensions of the West Excavation were approximately one hundred and fifty feet (150') in length, approximately one hundred and five feet (105') in width, and approximately ten feet (10') in depth. Due to safety concerns associated with excavating near and supporting two (2) fourteen-inch (14") diameter pipelines that bisect the release site, Plains requested and received NMOCD approval to leave the soil beneath and adjacent to the pipelines in-situ.

On July 2 and 3, 2009, three (3) soil borings (SB-1, SB-2, and SB-3) were advanced at the release site to evaluate the vertical extent of soil impact. During the advancement of the soil borings, groundwater was encountered at approximately sixty-four feet (64') below ground surface (bgs). On July 1, 2009, soil boring SB-1 was converted to monitor well MW-1.

On July 2, 2009, temporary casing was installed in soil borings SB-2 and SB-3 to allow a preliminary groundwater sample to be collected for analysis. Following collection of the preliminary groundwater sample, the temporary casing was removed from soil borings SB-2 and

SB-3, and the soil borings were plugged with cement and bentonite, pursuant to NMOCD and New Mexico Office of the State Engineer (NMOSE) standards.

On December 10, 2009, two (2) soil borings (SB-4 and SB-5) were installed up-gradient of the excavation to evaluate the potential groundwater impact from an up-gradient, off-site source. During the advancement of soil borings SB-4 and SB-5, groundwater was encountered at approximately sixty-four (64') bgs. Temporary casing was installed in soil borings SB-4 and SB-5 to allow a preliminary groundwater sample to be collected for analysis. Following collection of the preliminary groundwater sample, the temporary casing was removed from soil borings SB-4 and SB-5, and the soil borings were plugged with cement and bentonite, pursuant to NMOCD and NMOSE standards.

From May 6 through May 8, 2013, five (5) additional monitor wells (MW-2 through MW-6) were installed to evaluate the status of the groundwater at the site. The monitor wells were installed to total depths of approximately eighty feet (80') bgs. Monitor well MW-2 is located approximately three hundred and eighty feet (380') to the northwest (up-gradient) of monitor well MW-1. Monitor well MW-3 is located approximately two hundred feet (200') to the northeast (cross-gradient) of monitor well MW-1. Monitor well MW-1. Monitor well MW-1. Monitor well MW-1. Monitor well MW-4 is located approximately one hundred feet (100') to the northwest (up-gradient) of monitor well MW-1. Monitor well MW-1. Monitor well MW-5 is located approximately two hundred and eighty feet (280') to the west-northwest (cross-gradient) of monitor well MW-1. Monitor well MW-6 is located approximately one hundred and fifty feet (150') to the southeast (down-gradient) of monitor well MW-1.

PSH was not observed in monitor wells MW-2 through MW-6. Laboratory analytical results of soil samples collected during the installation of the monitor wells indicated benzene, toluene, ethylbenzene, and total xylenes (BTEX), total petroleum hydrocarbons (TPH), and chloride concentrations were less than NMOCD regulatory standards in all submitted samples.

From June 25 through June 26, 2014, three (3) additional monitor wells (MW-7, MW-8, and MW-9) were installed to further monitor the down- and cross-gradient migration of the dissolved-phase plume. The monitor wells were installed to total depths of approximately eighty feet (80') bgs. Monitor well MW-7 is located approximately forty-five feet (45') to the southeast (down-gradient) of monitor well MW-1. Monitor well MW-8 is located approximately one hundred eighty feet (180') to the east-northeast (cross-gradient) of monitor well MW-1. Monitor well MW-9 is located approximately one hundred fifty feet (150') to the southeast (down-gradient) of monitor well MW-9.

PSH was not observed in monitor wells MW-7 through MW-9. Laboratory analytical results of soil samples collected during the installation of the monitor wells indicated benzene, BTEX, TPH, and chloride concentrations were less than NMOCD regulatory standards in all submitted samples.

Currently, a total of nine (9) monitor wells (MW-1 through MW-9) are located at the 14-Inch Vac to Jal Legacy release site. Monitor wells MW-2 through MW-9 are gauged and sampled on a quarterly schedule, while MW-1 is gauged weekly but not sampled due to the presence of PSH.

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

3.0 FIELD ACTIVITIES

3.1 Groundwater Remediation Activities

A measurable thickness of PSH was detected in monitor well MW-1 during the April 12, 2012, quarterly monitoring event. Basin Environmental began manual, monthly gauging and recovery of PSH from MW-1 in April 2012. In November 2013, the frequency of PSH recovery was increased to twice monthly. The frequency was increased to weekly in June 2014. Approximately 776 gallons (18.5 barrels) of PSH has been recovered from MW-1 since recovery operations began in April 2012, and approximately 220 gallons (5.24 barrels) of PSH were recovered during the 2015 reporting period. The average PSH thickness measured in MW-1 during the reporting period was 1.09 feet, and the maximum PSH thickness was 2.33 feet on October 19, 2015.

Basin Environmental began monthly manual recovery of hydrocarbon-impacted groundwater from monitor wells MW-3 and MW-8 in November 2014 in an effort to control the down- and cross-gradient migration of the dissolved-phase plume. Groundwater recovery frequency was increased to weekly on January 26, 2015. Approximately 442 gallons (10.5 barrels) of impacted groundwater has been recovered from MW-3 since recovery operations began in November 2014, and approximately 426 gallons (10.1 barrels) were recovered during the 2015 reporting period. Approximately 425 gallons (10.1 barrels) of impacted groundwater has been recovered from MW-8 since November 2014, and approximately 409 gallons (9.74 barrels) were recovered during the 2015 reporting the 2015 reporting period.

All recovered fluids are disposed of at an NMOCD-approved disposal facility.

3.2 Groundwater Monitoring

The on-site monitor wells were gauged and sampled on February 25 (1Q2015), May 11 (2Q2015), August 10 (3Q2015), and December 7, 2015 (4Q2015). The groundwater monitoring events consisted of measuring static water levels in the on-site monitor wells (MW-1 through MW-9), checking for the presence of PSH, and purging and sampling of each well exhibiting sufficient recharge. The monitor wells were purged using disposable Teflon bailers of a minimum of three (3) well volumes of water, or until the wells were dry. Groundwater was allowed to recharge, and samples were obtained using clean, disposable Teflon bailers. Water samples were stored in clean, plastic or glass containers provided by the laboratory and placed on ice in the field. Purged water was collected in a trailer-mounted polystyrene tank and disposed of at an NMOCD-approved disposal.

Based on laboratory analytical results of groundwater samples collected from monitor well MW-5, which is located approximately two hundred and sixty feet (260') to the west-southwest (crossgradient) of the release point, and the absence of elevated chloride concentrations in the soil columns of monitor wells MW-2 through MW-6, Plains requested permission to cease monitoring of TDS and chloride in the *2013 Annual Monitoring Report*, dated March 2014. The request was subsequently approved by the NMOCD, with the caveat that a chloride sample would be collected from monitor well MW-2 on a quarterly basis. Quarterly chloride monitoring of MW-2 commenced in November 2014.

Locations of the groundwater monitoring wells and the inferred groundwater elevations, which were constructed from measurements collected during the 2015 quarterly sampling events, are depicted in Figures 2A through 2D. The "Groundwater Gradient Map" from the most recent sampling event (Figure 2D, December 7-8, 2015) indicates a general gradient of approximately 0.0025 feet/foot to the east-southeast as measured between monitor wells MW-2 and MW-3.

On December 12, 2015, the corrected groundwater elevation ranged between 3,002.48 and 3,003.37 feet above mean sea level in monitor wells MW-3 and MW-2, respectively. The "2015 Groundwater Elevation Data" is provided as Table 1.

4.0 LABORATORY RESULTS

Groundwater samples collected from the on-site monitor wells during the quarterly and yearly monitoring events were delivered to Xenco Laboratories in Odessa, Texas, for determination of BTEX and/or chloride concentrations by Environmental Protection Agency (EPA) Methods SW846-8021b and E300, respectively. A summary of laboratory analytical results is presented in Table 2, "Concentrations of Benzene, BTEX & Chloride in Groundwater". "Groundwater Concentration" maps are provided as Figure 3A through 3D. Laboratory analytical reports are provided as Appendix A.

Laboratory analytical results were compared to NMOCD regulatory limits based on the New Mexico groundwater standards found in section 20.6.2.3103 of the New Mexico Administrative Code (NMAC).

Monitor well MW-1

Monitor well MW-1 was not sampled during the 2015 reporting period due to the presence of PSH in the monitor well. PSH thickness ranged from 0.31 feet on October 26, 2015, to 2.33 feet on October 19, 2015.

Monitor Well MW-2

Laboratory analytical results indicate benzene concentrations ranged from less than the laboratory method detection limit (MDL) in 3Q2015 to 0.0232 mg/L in 4Q2015. Toluene, ethylbenzene, and total xylene concentrations were less than the appropriate laboratory MDL in all submitted groundwater samples. Chloride concentrations ranged from 8,640 mg/L in 4Q2015 to 11,500 mg/L in 3Q2015.

Benzene concentrations exceeded the NMOCD regulatory standard of 0.01 mg/L in 2Q2015 and 4Q2015. Toluene, ethylbenzene, and total xylene concentrations were less than NMOCD

regulatory standards in all submitted samples. Chloride concentrations exceeded the NMOCD regulatory standard of 250 mg/L in all submitted samples.

Monitor Well MW-3

Laboratory analytical results indicate benzene concentrations ranged from 0.0021 mg/L in 4Q2015 to 3.19 mg/L in 3Q2015. Toluene, ethylbenzene, and total xylene concentrations were less than the appropriate laboratory MDL in all submitted groundwater samples.

Benzene concentrations exceeded the NMOCD regulatory standard of 0.01 mg/L in 1Q2015, 2Q2015, and 3Q2015. Toluene, ethylbenzene, and total xylene concentrations were less than NMOCD regulatory standards in all submitted samples.

Monitor Well MW-4

Laboratory analytical results indicate benzene concentrations ranged from 0.0240 mg/L in 4Q2015 to 0.1810 mg/L in 3Q2015. Toluene and ethylbenzene concentrations were less than the appropriate laboratory MDL in all submitted groundwater samples. Total xylene concentrations ranged from 0.0070 mg/L in 3Q2015 to 0.0107 mg/L in 4Q2015.

Benzene concentrations exceeded the NMOCD regulatory standard of 0.01 mg/L in all submitted groundwater samples. Toluene, ethylbenzene, and total xylene concentrations were less than NMOCD regulatory standards in all submitted samples.

Monitor Well MW-5

Laboratory analytical results indicated benzene, toluene, ethylbenzene, and total xylene concentrations were both less than the appropriate laboratory MDL and less than NMOCD regulatory standards in all submitted groundwater samples.

Monitor Well MW-6

Laboratory analytical results indicated benzene, toluene, ethylbenzene, and total xylene concentrations were both less than the appropriate laboratory MDL and less than NMOCD regulatory standards in all submitted groundwater samples.

Monitor Well MW-7

Laboratory analytical results indicate benzene concentrations ranged from 0.0047 mg/L in 4Q2015 to 1.71 mg/L in 1Q2015. Toluene and ethylbenzene concentrations were less than the appropriate laboratory MDL in all submitted groundwater samples. Total xylene concentrations ranged from less than the laboratory MDL in 4Q2015 to 0.0354 mg/L in 1Q2015.

Benzene concentrations exceeded the NMOCD regulatory standard of 0.01 mg/L in 1Q2015, 2Q2015, and 3Q2015. Toluene, ethylbenzene, and total xylene concentrations were less than NMOCD regulatory standards in all submitted samples.

Monitor Well MW-8

Laboratory analytical results indicate benzene concentrations ranged from 0.0262 mg/L in 4Q2015 to 2.38 mg/L in 2Q2015. Toluene, ethylbenzene, and total xylene concentrations were less than the appropriate laboratory MDL in all submitted groundwater samples.

Benzene concentrations exceeded the NMOCD regulatory standard of 0.01 mg/L in all submitted groundwater samples. Toluene, ethylbenzene, and total xylene concentrations were less than NMOCD regulatory standards in all submitted samples.

Monitor Well MW-9

Laboratory analytical results indicate benzene, toluene, and ethylbenzene concentrations were less than the appropriate laboratory MDL in all submitted groundwater samples. Total xylene concentrations ranged from less than the laboratory MDL in 1Q2015 and 2Q2015 to 0.0051 mg/L in 4Q2015.

Benzene, toluene, ethylbenzene, and total xylene concentrations were less than NMOCD regulatory standards in all submitted samples.

5.0 SUMMARY

This report presents the results of groundwater monitoring activities for the 2015 annual monitoring period. Currently, there are nine (9) groundwater monitoring wells (MW-1 through MW-9) on-site. Monitor well MW-1 was not sampled in 2015 due to the presence of PSH.

The "Groundwater Gradient Map" from the most recent sampling event (Figure 2D, November 12, 2015) indicates a general gradient of approximately 0.0025 feet/foot to the southeast as measured between monitor wells MW-2 and MW-3.

A measurable thickness of PSH was detected in monitor well MW-1 throughout the 2015 reporting period. The average PSH thickness measured in MW-1 during the reporting period was 1.09 feet, and the maximum PSH thickness was 2.33 feet on October 19, 2015.

During the reporting period, approximately 220 gallons (5.24 barrels) of PSH were recovered, by manual recovery, from monitor well MW-1. Approximately 426 gallons (10.1 barrels) and 409 gallons (9.74 barrels) of impacted groundwater were recovered from monitor wells MW-3 and MW-8, respectively.

Review of laboratory analytical results generated from analysis of groundwater samples collected in 2015 indicated benzene concentrations exceeded the NMOCD regulatory standard of 0.01 mg/L in groundwater samples submitted from monitor wells MW-2 (2Q2015 and 4Q2015), MW-3 (1Q2015 through 3Q2015), MW-4 (all submitted samples), MW-7 (1Q2015 through 3Q2015), and MW-8 (all submitted samples). Benzene concentrations were less than the NMOCD regulatory standard of 0.01 mg/L in all groundwater samples submitted from monitor wells MW-5, MW-6, and MW-9. Toluene, ethylbenzene and total xylene concentrations were less than NMOCD regulatory standards in all submitted groundwater samples. Chloride concentrations exceeded the NMOCD regulatory standard of 250 mg/L in all groundwater samples submitted from monitor well MW-2.

6.0 ANTICIPATED ACTIONS

PSH recovery from monitor well MW-1 will continue on weekly schedule. Groundwater recovery from monitor wells MW-3 and MW-8 will continue on a weekly schedule. Basin Environmental will also commence weekly recovery of hydrocarbon-impacted groundwater from monitor wells MW-4 and MW-7 in an effort to control the down- and cross-gradient migration of the dissolved-phase plume. All recovered fluid will be disposed of at an NMOCD-permitted disposal facility. All recovered fluid will be disposed of at an NMOCD-permitted disposal facility.

Monitor wells MW-2 through MW-9 will be monitored and sampled quarterly for concentrations of BTEX. Monitor well MW-2 will also be monitored quarterly for concentrations of chloride. Results of the 2015 sampling events will be reported in the *2016 Annual Monitoring Report*, which will be submitted to the NMOCD by April 1, 2017.

Based on laboratory analytical results from groundwater samples collected during the 2014 and 2015 monitoring periods, Plains proposes to install five (5) additional monitor wells (MW-10 through MW-14) to further evaluate the status of groundwater at the site and to delineate the horizontal extent of the dissolved-phase plume. A "Proposed Monitor Well Locations" map was submitted to the NMOCD in January 2016 and is included as Figure 4. The proposed monitor wells will be installed during calendar year 2016, pending NMOCD and landowner approval and receipt of the proper drilling permit from the NMOSE.

7.0 LIMITATIONS

Basin Environmental Service Technologies, LLC, has prepared this *Annual Monitoring Report* to the best of its ability. No other warranty, expressed or implied, is made or intended. Basin Environmental has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Basin Environmental has not conducted an independent examination of the facts contained in referenced materials and statements. Basin Environmental has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Basin Environmental has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin Environmental 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 All American Pipeline, LP. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Service Technologies, LLC, and/or Plains All American Pipeline, LP.

8.0 DISTRIBUTION

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Figures





















Tables

TABLE 12015 GROUNDWATER ELEVATION DATA

PLAINS ALL AMERICAN PIPELINE, LP 14-INCH VAC TO JAL LEGACY LEA COUNTY, NEW MEXICO PLAINS SRS #: 2009-092 NMOCD REFERENCE #: 1RP-2162

WELL NUMBER	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW-1	02/25/2015	3,065.33	62.35	63.28	0.93	3,002.84
	05/08/2015	3,065.33	62.36	63.10	0.74	3,002.86
	08/10/2015	3,065.33	62.49	63.89	1.40	3,002.63
	12/08/2015	3,065.33	62.12	63.43	1.31	3,003.01
MW-2	02/25/2015	3,065.28	-	62.18	-	3,003.10
	05/08/2015	3,065.28	-	62.13	-	3,003.15
	08/10/2015	3,065.28	-	62.52	-	3,002.76
	12/08/2015	3,065.28	-	61.91	-	3,003.37
MW-3	02/25/2015	3,065.43	-	62.62	-	3,002.81
	05/08/2015	3,065.43	-	62.53	-	3,002.90
	08/10/2015	3,065.43	-	63.10	-	3,002.33
	12/08/2015	3,065.43		62.95		3,002.48
MW-4	02/25/2015	3,065.15	-	62.30	-	3,002.85
	05/08/2015	3,065.15	-	62.27	-	3,002.88
	08/10/2015	3,065.15	-	62.50	-	3,002.65
	12/08/2015	3,065.15	-	61.91	-	3,003.24
MW-5	02/25/2015	3,065.95	-	63.15	-	3,002.80
	05/08/2015	3,065.95	-	63.10	-	3,002.85
	08/10/2015	3,065.95	-	62.93	-	3,003.02
	12/07/2015	3,065.95	-	62.84	-	3,003.11
MW-6	02/25/2015	3,065.35	-	62.66	-	3,002.69
	05/11/2015	3,065.35	-	62.67	-	3,002.68
	08/10/2015	3,065.35	-	62.65	-	3,002.70
	12/07/2015	3,065.35	-	62.60	-	3,002.75
MW-7	02/25/2015	3,065.38	-	62.70	-	3,002.68
	05/11/2015	3,065.38	-	62.68	-	3,002.70
	08/10/2015	3,065.38	-	62.68	-	3,002.70
	12/07/2015	3,065.38	-	62.55	-	3,002.83
MW-8	02/25/2015	3,065.10	-	62.34	-	3,002.76
	05/11/2015	3,065.10	-	62.36	-	3,002.74
	08/10/2015	3,065.10	-	62.44	-	3,002.66
	12/07/2015	3,065.10	-	62.30	-	3,002.80
MW-9	02/25/2015	3,065.42	-	62.74	-	3,002.68
	05/11/2015	3,065.42	-	62.56	-	3,002.86
	08/10/2015	3,065.42	-	62.78	-	3,002.64
	12/07/2015	3,065.42	-	62.78	-	3,002.64

- = Not applicable

TABLE 22015 CONCENTRATIONS OF BENZENE, BTEX & CHLORIDE IN GROUNDWATER

PLAINS ALL AMERICAN PIPELINE, LP 14-INCH VAC TO JAL LEGACY LEA COUNTY, NEW MEXICO PLAINS SRS #: 2009-092

NMOCD REFERENCE #: 1RP-2162

		METHODS: EPA SW 846-8021B, 5030							
SAMPLE LOCATION	SAMPLE DATE	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL- BENZENE (mg/L)	M,P- XYLENES (mg/L)	O-XYLENES (mg/L)	TOTAL XYLENES (mg/L)	TOTAL BTEX (mg/L)	CHLORIDE (mg/L)
MW-2	02/25/2015	0.0095	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0095	9,120*
	05/08/2015	0.0113	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0113	9,860
	08/10/2015	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	11,500*
	12/08/2015	0.0232	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0232	8,640
MW-3	02/25/2015	0.1590	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.1590	-
	05/08/2015	2.96	<0.0400	<0.0200	<0.0400	<0.0200	<0.0400	2.96	-
	08/10/2015	3.19	<0.200	<0.100	<0.200	<0.100	<0.200	3.19	-
	12/08/2015	0.0021	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0021	-
MW-4	02/25/2015	0.0610	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0610	-
	05/08/2015	0.0259	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0259	-
	08/10/2015	0.1810	<0.0020	<0.0010	0.0070	<0.0010	0.0070	0.1880	-
	12/08/2015	0.0240	<0.0020	<0.0010	0.0107	<0.0010	0.0107	0.2510	-
MW-5	02/25/2015	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-
	05/08/2015	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-
	08/10/2015	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-
	12/07/2015	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-
MW-6	02/25/2015	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-
	05/11/2015	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-
	08/17/2015	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-
	12/07/2015	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-

TABLE 22015 CONCENTRATIONS OF BENZENE, BTEX & CHLORIDE IN GROUNDWATER

PLAINS ALL AMERICAN PIPELINE, LP 14-INCH VAC TO JAL LEGACY LEA COUNTY, NEW MEXICO PLAINS SRS #: 2009-092 NMOCD REFERENCE #: 1RP-2162

	SAMPLE DATE	METHODS: EPA SW 846-8021B, 5030							
SAMPLE LOCATION		BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL- BENZENE (mg/L)	M,P- XYLENES (mg/L)	O-XYLENES (mg/L)	TOTAL XYLENES (mg/L)	TOTAL BTEX (mg/L)	CHLORIDE (mg/L)
MW-7	02/25/2015	1.71	<0.0020	<0.0010	0.0354	<0.0010	0.0354	1.75	-
	05/11/2015	0.6070	<0.0100	<0.0050	0.0180	<0.0050	0.0180	0.6250	-
	08/17/2015	0.0420	<0.0020	<0.0010	0.0024	0.0015	0.0039	0.0459	-
	12/07/2015	0.0047	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0047	-
MW-8	02/25/2015	1.61	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	1.61	-
	05/11/2015	2.38	<0.0400	<0.0200	<0.0400	<0.0200	<0.0400	2.38	-
	08/10/2015	0.8760	<0.0500	<0.100	<0.0500	<0.100	<0.0500	0.8760	-
	12/07/2015	0.0262	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0262	-
MW-9	02/25/2015	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-
	05/11/2015	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	-
	08/17/2015	<0.0010	<0.0020	<0.0010	0.0023	<0.0010	0.0023	0.0023	-
	12/07/2015	<0.0010	<0.0020	<0.0010	0.0051	<0.0010	0.0051	0.0051	-
NMOCD CRITERIA		0.01	0.75	0.75	TOT	AL XYLENES	0.62		250

Note: MW-1 no longer sampled due to the presence of PSH.

- = Not analyzed.

Appendices

Appendix A Laboratory Analytical Reports

Analytical Report 503260

for PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

14" Vac To Jal Legacy

SRS# 2009-092

06-MAR-15

Collected By: Client





12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-14-18), Arizona (AZ0765), Florida (E871002), Louisiana (03054) New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135) Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

> Xenco-Lakeland: Florida (E84098) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



06-MAR-15

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

Reference: XENCO Report No(s): **503260 14'' Vac To Jal Legacy** Project Address: Lovington, NM

Ben Arguijo:

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(s) 503260. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 503260 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.

 Kelsey Brooks

 Project Manager

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Sample Cross Reference 503260



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac To Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-2	W	02-25-15 12:25		503260-001
MW-3	W	02-25-15 11:30		503260-002
MW-4	W	02-25-15 14:20		503260-003
MW-5	W	02-25-15 12:20		503260-004
MW-6	W	02-25-15 13:40		503260-005
MW-7	W	02-25-15 13:30		503260-006
MW-8	W	02-25-15 11:15		503260-007
MW-9	W	02-25-15 14:25		503260-008



CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S Project Name: 14'' Vac To Jal Legacy

 Project ID:
 SRS# 2009-092

 Work Order Number(s):
 503260

Report Date:06-MAR-15Date Received:03/03/2015

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Project Id: SRS# 2009-092 Contact: Ben Arguijo Project Location: Lovington, NM

Certificate of Analysis Summary 503260

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac To Jal Legacy



Date Received in Lab: Tue Mar-03-15 12:50 pm

Report Date: 06-MAR-15

Toject Location. Lovington, Twi								Project Ma	nager:	Kelsey Brook	s		
	Lab Id:	503260-	001	503260-	3260-002 503260-003		003	503260-004		503260-005		503260-006	
Arealusia Deguested	Field Id:	MW-	MW-2		3	MW-	4	MW-	5	MW-6		MW-´	7
Analysis Kequestea	Depth:												
	Matrix:	WATE	WATER		R	WATE	R	WATE	R	WATE	R	WATE	R
	Sampled:	Feb-25-15	Feb-25-15 12:25		11:30	Feb-25-15	14:20	Feb-25-15 12:20		Feb-25-15 13:40		Feb-25-15 13:30	
BTEX by EPA 8021B	Extracted:	Mar-04-15	Mar-04-15 13:00		13:00	Mar-04-15 13:00		Mar-04-15 13:00		Mar-04-15 13:00		Mar-04-15 13:00	
	Analyzed:	Mar-04-15	Mar-04-15 22:34		22:50	Mar-04-15 23:07		Mar-04-15 23:24		Mar-04-15	23:40	Mar-05-15	12:37
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		0.00949	0.00100	0.159	0.00100	0.0610	0.00100	ND	0.00100	ND	0.00100	1.71	0.0100
Toluene		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.0200
Ethylbenzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.0100
m_p-Xylenes		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	0.0354	0.0200
o-Xylene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.0100
Total Xylenes		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	0.0354	0.0100
Total BTEX		0.00949	0.00100	0.159	0.00100	0.0610	0.00100	ND	0.00100	ND	0.00100	1.75	0.0100

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Version: 1.%

Kuns Boah

Kelsey Brooks Project Manager



Project Id: SRS# 2009-092 Contact: Ben Arguijo Project Location: Lovington, NM Certificate of Analysis Summary 503260

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac To Jal Legacy



Date Received in Lab: Tue Mar-03-15 12:50 pm Report Date: 06-MAR-15

Project Manager: Kelsey Brooks

	Lab Id:	503260-0	007	503260-0	008		
Analysis Poguested	Field Id:	MW-8		MW-9	9		
Anuiysis Kequesieu	Depth:						
	Matrix:	WATE	R	WATE	R		
	Sampled:	Feb-25-15	11:15	Feb-25-15	14:25		
BTEX by EPA 8021B	Extracted:	Mar-04-15	13:00	Mar-04-15	13:00		
	Analyzed:	Mar-05-15	12:54	Mar-05-15	12:20		
	Units/RL:	mg/L	RL	mg/L	RL		
Benzene		1.61	0.0100	ND	0.00100		
Toluene		ND	0.0200	ND	0.00200		
Ethylbenzene		ND	0.0100	ND	0.00100		
m_p-Xylenes		ND	0.0200	ND	0.00200		
o-Xylene		ND	0.0100	ND	0.00100		
Total Xylenes		ND	0.0100	ND	0.00100		
Total BTEX		1.61	0.0100	ND	0.00100		

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

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Version: 1.%

Kms Boah

Kelsey Brooks Project Manager



Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect 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 quantitation limit and above the detection limit.
- 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.
- ** Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- RL Reporting Limit
- MDL Method Detection LimitSDL Sample Detection LimitLOD Limit of DetectionPQL Practical Quantitation LimitMQL Method Quantitation LimitLOQ Limit of Quantitation
- **DL** Method Detection Limit
- NC Non-Calculable
- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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2505 North Falkenburg Rd, Tampa, FL 33619
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(432) 563-1800

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(281) 240-4280

(214) 351-9139

(210) 509-3335

(813) 620-2033

(432) 563-1713 (770) 449-5477



Form 2 - Surrogate Recoveries

Project Name: 14" Vac To Jal Legacy

Work Or Lab Batch	r ders : 5032 #: 963138	60, Sample: 503260-001 / SMP	Batch	Project ID: 1 Matrix:	SRS# 2009- Water	-092				
Units:	mg/L	Date Analyzed: 03/04/15 22:34	SURROGATE RECOVERY STUDY							
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1,4-Difluor	obenzene		0.0312	0.0300	104	80-120				
4-Bromoflu	orobenzene		0.0333	0.0300	111	80-120				
Lab Batch	#: 963138	Sample: 503260-002 / SMP	Batch	n: 1 Matrix:	Water					
Units:	mg/L	Date Analyzed: 03/04/15 22:50	SU	RROGATE RI	ECOVERYS	STUDY				
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluor	obenzene	-	0.0326	0.0300	109	80-120				
4-Bromoflu	orobenzene		0.0314	0.0300	105	80-120				
Lab Batch	#: 963138	Sample: 503260-003 / SMP	Batch	n: 1 Matrix:	Water	1				
Units:	mg/L	Date Analyzed: 03/04/15 23:07	SU	RROGATE RI	ECOVERYS	STUDY				
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluor	obenzene	v	0.0329	0.0300	110	80-120				
4-Bromoflu	orobenzene		0.0299	0.0300	100	80-120				
Lab Batch	#: 963138	Sample: 503260-004 / SMP	Batch	n: 1 Matrix:	Water	1				
Units:	mg/L	Date Analyzed: 03/04/15 23:24	SU	RROGATE RI	ECOVERYS	STUDY				
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
1.4 Difluor	obenzene	Analytes	0.0211	0.0200	104	80.120				
4-Bromoflu	orobenzene	I	0.0220	0.0300	104	80.120				
Lab Batch	#• 063138	Sample: 503260-005 / SMP	0.0550 Ratek	0.0300	Water	80-120				
Units:	mg/L	Date Analyzed: 03/04/15 23:40	SU	RROGATE RI	ECOVERY	STUDY				
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes								
1,4-Difluor	obenzene		0.0318	0.0300	106	80-120				
4-Bromoflu	orobenzene		0.0341	0.0300	114	80-120				

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: 14" Vac To Jal Legacy

Work Or Lab Batch	ders : 50326 #: 963138	0, Sample: 503260-008 / SMP	Batch	Project ID: 1 Matrix:	SRS# 2009- Water	-092				
Units:	mg/L	Date Analyzed: 03/05/15 12:20	SURROGATE RECOVERY STUDY							
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes								
1,4-Difluoro	benzene		0.0304	0.0300	101	80-120				
4-Bromoflue	orobenzene		0.0339	0.0300	113	80-120				
Lab Batch	#: 963138	Sample: 503260-006 / SMP	Batch	n: 1 Matrix:	Water					
Units:	mg/L	Date Analyzed: 03/05/15 12:37	SU	RROGATE RI	ECOVERY	STUDY				
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluoro	benzene	1 11100 9 000	0.0337	0.0300	112	80-120				
4-Bromoflue	orobenzene		0.0335	0.0300	112	80-120				
Lab Batch	#: 963138	Sample: 503260-007 / SMP	Batch	n: 1 Matrix:	Water	1				
Units:	mg/L	Date Analyzed: 03/05/15 12:54	SU	RROGATE RI	ECOVERYS	STUDY				
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1 4-Difluoro	henzene		0.0336	0.0300	112	80-120				
4-Bromoflue	orobenzene		0.0318	0.0300	106	80-120				
Lab Batch	#: 963138	Sample: 689349-1-BLK / B	IK Batch	1 Matrix:	Water	00-120				
Units:	mg/L	Date Analyzed: 03/04/15 17:19	SU.	RROGATE RI	ECOVERY	STUDY				
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluoro	benzene		0.0312	0.0300	104	80-120				
4-Bromoflue	orobenzene		0.0349	0.0300	116	80-120				
Lab Batch	#: 963138	Sample: 689349-1-BKS / BI	KS Batch	n: 1 Matrix:	Water		<u> </u>			
Units:	mg/L	Date Analyzed: 03/04/15 17:35	SU	RROGATE RI	ECOVERY	STUDY				
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluoro	benzene		0.0358	0.0300	119	80-120				
4-Bromoflue	orobenzene		0.0316	0.0300	105	80-120				

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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


Project Name: 14" Vac To Jal Legacy

Work Orders : 503260,		Project ID:	SRS# 2009-	-092	
Lab Batch #: 963138 Sample: 689349-1-BS	D / BSD Batch	h: 1 Matrix	Water		
Units: mg/L Date Analyzed: 03/04/15 17:5	2 SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	
Lab Batch #: 963138 Sample: 503254-001 S	MS Batch	h: 1 Matrix	Water	· · · · ·	
Units: mg/L Date Analyzed: 03/04/15 18:0	9 SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	
Lab Batch #: 963138 Sample: 503254-001 S	D / MSD Batch	h: 1 Matrix	Water		
Units: mg/L Date Analyzed: 03/04/15 18:2	5 SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0317	0.0300	106	80-120	

* Surrogate outside of Laboratory QC limits

- ** Surrogates outside limits; data and surrogates confirmed by reanalysis
- *** Poor recoveries due to dilution
- Surrogate Recovery [D] = 100 * A / B



BS / BSD Recoveries



Project Name: 14'' Vac To Jal Legacy

Work Order #: 503260							Pro	ject ID: S	SRS# 2009-	-092	
Analyst: ARM	D	ate Prepar	red: 03/04/201	5			Date A	nalyzed: (03/04/2015		
Lab Batch ID: 963138 Sample: 689349-1-B	KS	Bate	h #: 1					Matrix: V	Water		
Units: mg/L		BLAN	K /BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUI	ΟY	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	< 0.00100	0.100	0.103	103	0.100	0.105	105	2	70-125	25	
Toluene	< 0.00200	0.100	0.103	103	0.100	0.105	105	2	70-125	25	
Ethylbenzene	< 0.00100	0.100	0.110	110	0.100	0.113	113	3	71-129	25	
m_p-Xylenes	< 0.00200	0.200	0.217	109	0.200	0.222	111	2	70-131	25	
o-Xylene	< 0.00100	0.100	0.108	108	0.100	0.110	110	2	71-133	25	

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries

Project Name: 14" Vac To Jal Legacy



Work Order # :	503260						Project II): SRS# 2	2009-092			
Lab Batch ID:	963138	QC- Sample ID:	503254	-001 S	Ba	tch #:	1 Matrix	k: Water				
Date Analyzed:	03/04/2015	Date Prepared:	03/04/2	015	An	alyst: A	ARM					
Reporting Units:	mg/L		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERYS	STUDY		
E	BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Benzene		< 0.00100	0.100	0.107	107	0.100	0.106	106	1	70-125	25	
Toluene		< 0.00200	0.100	0.108	108	0.100	0.106	106	2	70-125	25	
Ethylbenzene		< 0.00100	0.100	0.116	116	0.100	0.113	113	3	71-129	25	
m_p-Xylenes		<0.00200	0.200	0.226	113	0.200	0.222	111	2	70-131	25	
o-Xylene		< 0.00100	0.100	0.113	113	0.100	0.111	111	2	71-133	25	

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Basis Extractionmental Service Technologies LLC Profile (575)984-2378 TAT Work Days = D Need results by: Time: With Basis	Labor	Houston: 4143 Green Hobbs: 4008 N Grime	briar Dr. Stafford s Hobbs, NM 88	CHA 5, TX 77477 (28 3240 (575)392-	IN O 31)240-420 7550	F C o odd	US essa: 1	TO 2600 W	DY RI est I-20 East	Odessa,	TX 79765	5 (432)56	3-1800	LAE	F 3 W.O	Page 1 #:	_of	03:	Xeo	* Container T VA Vial Amber ES VC Vial Clear TS VP Vial Pre-preserved AC GA Glass Amber TB GC Glass Clear ZB	ype Codes Encore Sampler TerraCore Sample Air Canister Tedlar Bag Zin Lock Bag
Balance Balance <t< th=""><th>ompany:</th><th>Basin Environmental Service Te</th><th>echnologies, Ll</th><th>LC</th><th>Phone</th><th>(57</th><th>5)396-:</th><th>2378</th><th>TAT W</th><th>ork Da</th><th>vs = D</th><th>Nee</th><th>d result</th><th>= hv:</th><th>Dillable</th><th>nis:</th><th></th><th></th><th></th><th>PA Plastic Amber PC PC Plastic Clear</th><th>Plastic Clear</th></t<>	ompany:	Basin Environmental Service Te	echnologies, Ll	LC	Phone	(57	5)396-:	2378	TAT W	ork Da	vs = D	Nee	d result	= hv:	Dillable	nis:				PA Plastic Amber PC PC Plastic Clear	Plastic Clear
Offset Devingtion State: MM Zip: Base Arguing Control of the P of	ddress:	3100 Plains Hwy.			Fax:	(57	5)396-	1429		Std (F	5 (05)	Hre 10			0 70 4	00 110		ime:		Other	107 1001
MARKEN Banak: Operational space com- step (2020 and 1000 mm (2020 mm (20	lity:	Lovington		State: NM	Zip:	882	60			10.0010	5	Δ	MALV			OD 14L	0 Othe	er	_	40ml, 125 ml, 250 ml, 500 ml,	1L, Other
Open ID: D'OR: POR: PAA-C. Bryant M I<	M/Attn:	Ben Arguijo		Email:	cjbryant(bjarguijo	@paalp. @basin	.com, env.con	n	Cont Type *	VP	PC		I WALK I		EQUE	SIED			-	Preservative	Type Codes
Order Te: Carnille Bryant Plains All Arrenican Outro #: O	oject ID:	14" Vac to Jal Legacy SRS #2009-092			PO#:	PAA	-C. Bry	ant	Pres Type**			1	+	-	-	+	-	-		A. None E. HCL I. B. HNO ₃ F. MeOH J. H ₂ SO ₄ G. Na ₂ S ₂ O ₅ K. Zr	Ice MCAA Ac&NaOH
Imper Name: Clifcle One Event: Daily Weekly Monthly Quarter Imper Name: Clifcle One Event: Daily Monthly Quarter Imper Name: Imper Name	voice To:	Camille Bryant Plains All A	merican		Quote #	¢:			0	<u> </u>	1	1	1	-	-		-	+		D. NaOH H. ŇaĤŠO₄ L O	Asbc Acid&NaOH
Sample/ID Collect Date Marry Reg Reg Reg Reg Reg Reg Reg Reg Reg Reg	mpler Na ley Saxto	me: n	Circle One Semi-Annua	Event: Daily al Annual	Weekly N/A	Mont	hly Q	luartely	ample is by 826	TEX	oride								Sample Run PAI	A Matrix Typ GW Ground Water S WW Waste Water W DW District Works	e Codes Soil/Sediment/Solid
1 MW-2 2/26/15 1>2/5 GW Hb X X X X X X N 2 MW-3 2/25/15 1/30 GW 3 X Image: Constraint of the second	# aidilipe	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (YIN)	Total # of containers	Ex	B	あら	RB							Hold (CALL)	SW Drinking water A SW Surface Water O OW Ocean/Sea Water T PL Product-Liquid U PS Product-Solid B t SL Sludge	Air Díl Fissue Jrine Blood
2 MW-3 2/25/15 //30 GW 3 X V V 2 MW-3 2/25/15 //30 GW 3 X V V 3 MW-4 2/25/15 //40 GW 3 X V V 4 MW-5 2/25/15 //30 GW 3 X V V 5 MW-6 2/25/15 //30 GW 3 X V V V 6 MW-7 2/25/15 //30 GW 3 X V V V V 7 MW-8 2/25/15 //45 GW 3 X V	1	MW-2	2/25/15	1225	014		101	8	# Cont	Lab On		th	1	-	-	1	-			REMAR	KS
3 MW-4 2/25/15 1/30 GW 3 X	2	MW-3	2/25/15	1120	GW	-	BUB-	A		X	X	1	-	-	1						
4 MW-5 2/25/15 120 GW 3 X Image: Constraint of the const	3	MW-4	2/25/15	1420	GW	-	-	3		X		-	-	-	-	-	-				
5 MW-6 2/25/15 (340) GW 3 X Image: Constraint of the second of	4	MW-5	2/25/15	1220	GW			3		A V		-	-	-	-	-	-				
6 MW-7 2/25/15 1/30 GW 3 X Image: Constraint of the cons	5	MW-6	2/25/15	1340	GW	-		3		N V	-		-	-	_	11.	-	-			
MW-8 2/25/15 MS GW 3 X Image: Constraint of the second s	5	MW-7	2/25/15	1330	GW	-		3		X	1	-	1	-	-	-	-	-		1.	
MW-9 2/25/15 1/405 GW 3 X A	2	MW-8	2/25/15	1115	GW			3		X		-	-	-	-	-		-			
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Reg. Program / Clean-up Std STATE for Certs & Regs QA/QC Level & Certification EDDs COC & Labels Coolers Temp *C Lab Use Only YES No TRRP DW NPDES LPST DryCin FL TX GA NC SC NJ PA OK LA AL NM Other: 1 2 3 4 CLP AFCEE QAPP NELAC DoD-ELAP Other: ADaPT SEDD ERPINS XLS Other: Match Incomplete Absent Unclear 3.02 3 Non-Conformances found? Samples inlact upon arrival? Samples inlact upon arrival	1												-					1			
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Upper (1, U) 2/1/25/15 1/1.00 1/1.00 1/1.00 Labeled with proper preservatives? Upper (1, U) 2/1/25/15 1/1.00 1/1/1.00 1/1/1.00 1/1/1.00 Received with indding time? Upper (1, U) 3/2/15 1/400 1/1/1.00 1/1/1.00 3/2-15 1/400 Upper (1, U) 3/2/15 1/400 1/1/1.00 3/2-15 1/400 Upper (1, U) 3/2/15 1/2/25 1/1/1.00 3/2/15 3/3/15 Upper (1, U) 3/2/15 1/2/25 1/1/1.00 1/1/1.00 Upper (1, U) 3/2/15 1/2/25 1/1/1.00 1/1/1.00 Upper (1, U) 3/2/15 3/3/15 3/3/15 1/1/1.00 Upper (1, U) 3/2/15 1/2/25 1/1/1.00 1/1/1.00	DS	main and a street by		Affiliatio	n	2.4	Date		Time		Re	ceived	by	Affili	ation	Da	ite	Ti	ne F	eamples intact upon arrival? Received on Wet Ice?	
Bull lank me basin 3-2-15 1525 Houten 3-2-15 1400 Custody seals intad? Proper containers used? Proper containers used? Proper containers used? Proper containers used? Proper containers used? Proper containers used? Proper containers used?	1	The	0	Bunk	E I	21	1511	5 /	1.00	-	-	11		12 sig	Ens.	2/25/1	5	170	0 R	abeled with proper preservatives? acceived within holding time?	
pH verified-acceptable, excl VOCs?	14	Makan		basin)	11.	3-1	2-12	-	1700	_	DI	Marke NH	ne	L	0	3-2-1	15	14	00 0	Custody seals intact? OCs rec'd w/o headspace?	===
						5.	- 10	2	1365	-	AIP	M	~	1 XAA	1.2	312	12	3	7 pl	H verified-acceptable, excl VOCs? eceived on time to meet HT=?	

FTS Service Centers: Atlanta 770-449-8800 Lakeland 863-646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099 34 Phoenix 602-437-0330

Execution of this document by client creates a legal and binding agreement between client and Xenco for analytical and testing services provided by Xenco to client under Xenco's standard terms and conditions unless previously agreed in writing. Terms of payment are Net 30 days, and all past due amounts shall accrue interest at 1.5% per month until paid in full. All laboratory analytical data and reports generated by Xenco remain the exclusive property of Xenco until invoices for such data are paid in full. Revision Date: Nov 12, 2009

Final 1.000

Page 13 of 14



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 03/03/2015 12:50:00 PM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Work Order #: 503260

Temperature Measuring device used :

Sample Ree	ceipt Checklist	Comments
#1 *Temperature of cooler(s)?	0	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?	Yes	
#6 *Custody Seals Signed and dated?	Yes	
#7 *Chain of Custody present?	Yes	
#8 Sample instructions complete on Chain of Custody?	Yes	
#9 Any missing/extra samples?	No	
#10 Chain of Custody signed when relinquished/ received	? Yes	
#11 Chain of Custody agrees with sample label(s)?	Yes	
#12 Container label(s) legible and intact?	Yes	
#13 Sample matrix/ properties agree with Chain of Custor	dy? Yes	
#14 Samples in proper container/ bottle?	Yes	
#15 Samples properly preserved?	Yes	
#16 Sample container(s) intact?	Yes	
#17 Sufficient sample amount for indicated test(s)?	Yes	
#18 All samples received within hold time?	Yes	
#19 Subcontract of sample(s)?	No	
#20 VOC samples have zero headspace (less than 1/4 in	ch bubble)? Yes	
#21 <2 for all samples preserved with HNO3,HCL, H2SO4 samples for the analysis of HEM or HEM-SGT which are vanalysts.	4? Except for Yes erified by the	
#22 >10 for all samples preserved with NaAsO2+NaOH, 2	ZnAc+NaOH? No	

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Date: 03/03/2015

Checklist completed by: Murshvah Kelsey Brooks Checklist reviewed by: Murshvah Kelsey Brooks

Date: 03/03/2015

Analytical Report 503937

for PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

14" Vac To Jal Legacy

SRS# 2009-092

19-MAR-15

Collected By: Client





12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-14-18), Arizona (AZ0765), Florida (E871002), Louisiana (03054) New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135) Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

> Xenco-Lakeland: Florida (E84098) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



19-MAR-15



Reference: XENCO Report No(s): 503937 14" Vac To Jal Legacy Project Address: Lovington, NM

Ben Arguijo:

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(s) 503937. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 503937 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.

 Kelsey Brooks

 Project Manager

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Sample Cross Reference 503937



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac To Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-2	W	03-13-15 00:00		503937-001



CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S Project Name: 14'' Vac To Jal Legacy

 Project ID:
 SRS# 2009-092

 Work Order Number(s):
 503937

 Report Date:
 19-MAR-15

 Date Received:
 03/13/2015

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Project Id: SRS# 2009-092 Contact: Ben Arguijo Project Location: Lovington, NM Certificate of Analysis Summary 503937

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac To Jal Legacy



Date Received in Lab: Fri Mar-13-15 11:35 am Report Date: 19-MAR-15

Project Manager: Kelsey Brooks

				 2	
	Lab Id:	503937-001			
Analysis Doguested	Field Id:	MW-2			
Analysis Kequesieu	Depth:				
	Matrix:	WATER			
	Sampled:	Mar-13-15 00:00			
Inorganic Anions by EPA 300/300.1	Extracted:	Mar-19-15 04:54			
	Analyzed:	Mar-19-15 04:54			
	Units/RL:	mg/L RL			
Chloride		9120 200			

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kms Boah

Kelsey Brooks Project Manager

Final 1.000



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 affect the recovery of the spike concentration. This condition could also affect 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 quantitation limit and above the detection limit.
- 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.
- ** Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- RL Reporting Limit
- MDL Method Detection LimitSDL Sample Detection LimitLOD Limit of DetectionPQL Practical Quantitation LimitMQL Method Quantitation LimitLOQ Limit of Quantitation
- **DL** Method Detection Limit
- NC Non-Calculable
- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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4143 Greenbriar Dr, Stafford, TX 77477
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(214) 351-9139

(210) 509-3335

(813) 620-2033

(432) 563-1713

(770) 449-5477



BS / BSD Recoveries



Project Name: 14" Vac To Jal Legacy

Work Order #: 503937							Pro	ject ID: S	SRS# 2009-	092	
Analyst: JUM	D	ate Prepar	ed: 03/19/201	5			Date A	nalyzed: ()3/19/2015		
Lab Batch ID: 964067 Sample: 689949-1-B	KS	Bate	h #: 1					Matrix: \	Water		
Units: mg/L		BLAN	K/BLANK S	SPIKE / F	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUE	PΥ	
Inorganic Anions by EPA 300/300.1	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
Chloride	<1.00	25.0	24.2	97	25.0	24.1	96	0	90-110	20	

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

XENCO Laboratories Project Name	n 3 - MS e: 14" Vac T	Recov o Jal Le	eries _{gacy}		And Access	and the second s
Work Order #: 503937						
Lab Batch #: 964067			Proj	ect ID: SI	RS# 2009-09	2
Date Analyzed: 03/19/2015 Date	Prepared: 03/1	9/2015	A	Analyst: JU	JM	
QC- Sample ID: 503937-001 S	Batch #: 1]	Matrix: W	ater	
Reporting Units: mg/L	MATE	RIX / MA	TRIX SPIKE	RECOV	ERY STU	DY
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes		[B]				
Chloride	9120	5000	14200	102	80-120	

Matrix Spike Percent Recovery $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference $[E] = 200^{\circ}(C-A)/(C+B)$ All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Compan	HODDS: 4008 N Grin Asbestos Badliachemistry Y: Basin Environmental Service	Technologies II	3240 (575)392-	7550 Phone						. 17(13)	55 (432)5	53-1800	LA Fiel	B W.C) # : e Hrs :	5	02	137	VC Vial Clear TS VP Vial Pre-preserved AC GA Glass Amber TB GC Glass Clear ZB	Encore Sampler TerraCore Samp Air Canister Tedlar Bag Zip Lock Bag
ddress	3100 Plains Hwy.			Eav:	(57	5)396-	2378	TAT V	Vork D	ays = C	Nee	d result	s by:			Т	ime:		PC Plastic Clear Other	Plastic Clear
ity:	Lovington		State: NM	Zin	(57:	5)396-	1429		Std (5-7D) :	5Hrs 1	2D 3	D 4D 5	D 7D	10D 14	D Othe	ir.		Size(s): 20z, 40z, 80z, 160z, 3	2oz , 1Gal
M/Attn:	Ben Arquito		Email	cibryant/	882	60					A	NALY	SES F	REQUE	STED	ound			40mi, 125 mi, 250 mi, 500 mi,	1L, Other
roject II	D: 14" Vac to Jal Legacy		Cinan.	bjarguijo	@basin	env.cor	n	Cont Type ' VC	PC								1	1	Aller	Type coue
unless T	SRS #2009-092			P0#:	PAA	-C. Bry	ant	Pres Type**						1		-	-		B. HNO ₃ F. MeOH J.	Ice MCAA
voice I	o: Camille Bryant Plains All /	American		Quote #	<i>t</i> :			0		-	-	+	-	-	-	-	-		D. NaOH H. NaHSO4 L	Asbc Acid&NaC
mpler I ley Sax	Name: kton	Circle One	Event: Daily	Weekly	Mont	hly Q	uartely	lle / 826(de									ile In PAH Only II	^ Matrix Typ	e Codes
T		Semi-Annua	I Annual	N/A	-			amp (d si	ori			1		1				Samp Ru	GW Ground Water S WW Waste Water W	Soil/Sediment/Soli Wipe
	Sample ID	Collect Date	Collect Time	Matrix Code ^	ld ered	(VIN)	al # of tainers	Ex /olatile	Ch									Hold (DW Drinking Water A SW Surface Water O (OW Ocean/Sea Water T Pl Product Linuid	Air Dil Tissue
					Fle	Inte OK	Tot	#Cont							-			(CALL on Hig	PS Product-Solid B F SL Sludge Other	3lood
1	MW-2	3/3/15		GW			1		V	1	1	T	T	1	-	-	-		REMAR	KS
2						-	-		~	-	-	-	-	-	-					1
3						-	-			-	-	-	-							
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5					-	-	-			1										
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1					-							1								
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1					-															
Reg	Program (Observe)													1						
TRRP	DW NPDES LPST DrvCln	STATE fo	r Certs & R	egs	QA/	QC L	evel 8	Certificat	ion		EDDs		COC &	Labels	G	oolers	Temp °(Lubit and	
	Relinquished by	AL NM Other:	SC NJ PA (DK LA	1 <u>2</u> ELAC	3 4 (DoD-El	CLP A	FCEE QAPP	,	ADaPT LS Othe	SEDD E	RPIMS	Match I	ncomplete	161	0	o o	No	n-Conformances found?	YES NO N
far	4 Sant		Athliation	n 	D	ate		Time		Re	ceived	ру	Affilia	ation	Dat	_2 te	<u>3</u> Tin	Sa NG Re	mples intact upon arrival?	
0	1/10		Les .		219	-/-	- 1	9-00		BIL	45		lesm	FAV.	3/17	115	130		ceived with proper preservatives?	
1.	Malater		21/11/	10	3/10	2/15		1325	_	1/00	Tuhil	00	Busin	n	3/12/	15	13:	75 Cu	stody seals intact?	
	1 porto		ptn	-	5/12	115	5 1	14.15		10								Pro	per containers used?	

646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099

Execution of this document by client creates a legal and binding agreement between client and Xenco for analytical and testing services provided by Xenco to client under Xenco's standard terms and conditions unless previously agreed in writing. Terms of payment are Net 30 days, and all past due amounts shall accrue interest at 1.5% per month until paid in full. All laboratory analytical data and reports generated by Xenco remain the exclusive property of Xenco until invoices for such data are paid in full. Revision Date: Nov 12, 2009

C.O.C. Serial #

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Page 9 of 10



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 03/13/2015 11:35:00 AM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Work Order #: 503937

Temperature Measuring device used :

Sample Receipt Chee	cklist Comments
#1 *Temperature of cooler(s)?	5.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	No
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	e No
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH	1? No

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Date: 03/13/2015

Checklist completed by: Murshvah Kelsey Brooks Checklist reviewed by: Murshvah Kelsey Brooks

Date: 03/13/2015

Analytical Report 507646

for PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

14" Vac to Jal Legacy

SRS#2009-092

18-MAY-15

Collected By: Client





12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-14-18), Arizona (AZ0765), Florida (E871002), Louisiana (03054) New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135) Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

> Xenco-Lakeland: Florida (E84098) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



18-MAY-15

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

Reference: XENCO Report No(s): 507646 14" Vac to Jal Legacy Project Address: New Mexico

Ben Arguijo:

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(s) 507646. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 507646 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.

 Kelsey Brooks

 Project Manager

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Sample Cross Reference 507646



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-2	W	05-08-15 15:20		507646-001
MW-3	W	05-08-15 15:10		507646-002
MW-4	W	05-08-15 14:50		507646-003
MW-5	W	05-08-15 14:33		507646-004
MW-6	W	05-11-15 11:15		507646-005
MW-7	W	05-11-15 12:15		507646-006
MW-8	W	05-11-15 09:55		507646-007
MW-9	W	05-11-15 10:35		507646-008



CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S Project Name: 14'' Vac to Jal Legacy

Project ID: SRS#2009-092 Work Order Number(s): 507646 Report Date: 18-MAY-15 Date Received: 05/12/2015

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None





PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id : MW-2 Lab Sample Id : 507646-001	Matrix : Date Colle Date Rece	Water ected : 05.08.15 1 ived : 05.12.15 1	15.20 13.20	% Moisture :		
Analytical Method : BTEX by EPA 802	1			Prep Method:	SW5030B	
Seq Number 968228				Date Prep:	05.14.15 13	3.00
Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene Total BTEX	71-43-2	0.0113 0.0113	mg/L mg/L	05.14.15 20.04 05.14.15 20.04		1 1
Analytical Method : Inorganic Anions b	y EPA 300/300.1			Prep Method:	E300P	
Seq Number 968362				Date Prep:	05.17.15 20	0.27
Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9860	mg/L	05.17.15 20.27		200
Sample Id : MW-3 Lab Sample Id : 507646-002	Matrix : Date Colle Date Rece	Water ected : 05.08.15 1 ived : 05.12.15 1	15.10 13.20	% Moisture :		
Analytical Method : BTEX by EPA 802 Sea Number 968228	1			Prep Method: Date Prep:	SW5030B	3 00
Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene Total BTEX	71-43-2	2.96 2.96	mg/L mg/L	05.15.15 10.29 05.15.15 10.29		20 20
Sample Id : MW-4 Lab Sample Id : 507646-003	Matrix : Date Colle Date Rece	Water ected : 05.08.15 1 ived : 05.12.15 1	14.50 13.20	% Moisture :		
Analytical Method : BTEX by EPA 802	1			Prep Method:	SW5030B	
Seq Number 968228				Date Prep:	05.14.15 12	3.00
Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene Total BTEX	71-43-2	0.0259 0.0259	mg/L mg/L	05.15.15 09.41 05.15.15 09.41		1 1





05.14.15 13.00

PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Date Prep:

Sample Id :MW-7Lab Sample Id : 507646-006	Matrix : Date Collecte Date Receive	Water d : 05.11.15 12.15 d : 05.12.15 13.20	% Moisture :
Analytical Method : BTEX by EPA 8021			Prep Method: SW5030B

Analytical Method : BTEX by EPA 8021 Seq Number 968228

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.607	mg/L	05.15.15 10.44		5
m p-Xylenes	179601-23-1	0.0180	mg/L	05.15.15 10.44		5
Xylenes, Total	1330-20-7	0.0180	mg/L	05.15.15 10.44		5
Total BTEX		0.625	mg/L	05.15.15 10.44		5

Sample Id : Lab Sample Id :	MW-8 507646-007	Matrix : Date Collec	Water ted : 05.11.15 09	.55	% Moisture :		
		Date Receiv	red : 05.12.15 13	.20			
Analytical Meth	nod : BTEX by EPA 8021				Prep Method:	SW5030B	
Seq Number	968228				Date Prep:	05.14.15 13.	00
Parameter		Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene Total BTEX		71-43-2	2.38 2.38	mg/L mg/L	05.15.15 11.00 05.15.15 11.00		20 20



Project Id: SRS#2009-092 Contact: Ben Arguijo Project Location: New Mexico

Certificate of Analysis Summary 507646

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy



Date Received in Lab: Tue May-12-15 01:20 pm

Report Date: 18-MAY-15

								Project Ma	nager:	Kelsey Brook	S		
	Lab Id:	507646	-001	507646-0	002	507646-	003	507646-	004	507646-0	005	507646-0	006
Anglusis Deguested	Field Id:	MW	-2	MW-3	;	MW-4	4	MW-	5	MW-6	5	MW-	7
Analysis Kequestea	Depth:		ľ										
	Matrix:	WATI	ER	WATE	R	WATE	R	WATE	R	WATE	R	WATE	R
	Sampled:	May-08-15	5 15:20	May-08-15	15:10	May-08-15	14:50	May-08-15	14:33	May-11-15	11:15	May-11-15	12:15
BTEX by EPA 8021	Extracted:	May-14-1	5 13:00	May-14-15	13:00	May-14-15	13:00	May-14-15	13:00	May-14-15	13:00	May-14-15	13:00
	Analyzed:	May-14-1	5 20:04	May-15-15	10:29	May-15-15	09:41	May-15-15	09:58	May-14-15	21:11	May-15-15	10:44
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		0.0113	0.00100	2.96	0.0200	0.0259	0.00100	ND	0.00100	ND	0.00100	0.607	0.00500
Toluene		ND	0.00200	ND	0.0400	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.0100
Ethylbenzene		ND	0.00100	ND	0.0200	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00500
m_p-Xylenes		ND	0.00200	ND	0.0400	ND	0.00200	ND	0.00200	ND	0.00200	0.0180	0.0100
o-Xylene		ND	0.00100	ND	0.0200	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00500
Xylenes, Total		ND	0.00100	ND	0.0200	ND	0.00100	ND	0.00100	ND	0.00100	0.0180	0.00500
Total BTEX		0.0113	0.00100	2.96	0.0200	0.0259	0.00100	ND	0.00100	ND	0.00100	0.625	0.00500
Inorganic Anions by EPA 300/300.1	Extracted:	May-17-1:	5 20:27										
	Analyzed:	May-17-1.	5 20:27										
	Units/RL:	mg/L	RL										
Chloride		9860	200										

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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Huns Boah

Kelsey Brooks Project Manager



Project Id: SRS#2009-092 Contact: Ben Arguijo Project Location: New Mexico

Certificate of Analysis Summary 507646

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy



Date Received in Lab: Tue May-12-15 01:20 pm Report Date: 18-MAY-15

Project Manager: Kelsey Brooks

	Lab Id:	507646-0	007	507646-	008		
Analysis Poguested	Field Id:	MW-8	3	MW-9	9		
Anuiysis Kequesieu	Depth:						
	Matrix:	WATE	R	WATE	R		
	Sampled:	May-11-15	09:55	May-11-15	10:35		
BTEX by EPA 8021	Extracted:	May-14-15	13:00	May-14-15	13:00		
	Analyzed:	May-15-15	11:00	May-14-15	19:48		
	Units/RL:	mg/L	RL	mg/L	RL		
Benzene		2.38	0.0200	ND	0.00100		
Toluene		ND	0.0400	ND	0.00200		
Ethylbenzene		ND	0.0200	ND	0.00100		
m_p-Xylenes		ND	0.0400	ND	0.00200		
o-Xylene		ND	0.0200	ND	0.00100		
Xylenes, Total		ND	0.0200	ND	0.00100		
Total BTEX		2.38	0.0200	ND	0.00100		

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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Kms Boah

Kelsey Brooks Project Manager



Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect 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 quantitation limit and above the detection limit.
- 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.
- ** Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- **RL** Reporting Limit
- **MDL** Method Detection Limit **SDL** Sample Detection Limit LOD Limit of Detection LOQ Limit of Quantitation **POL** Practical Quantitation Limit MQL Method Quantitation Limit
- **DL** Method Detection Limit
- NC Non-Calculable
- + NELAC certification not offered for this compound.
- (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	



Project Name: 14" Vac to Jal Legacy

Work Or Lab Batch	r ders : 50764 #: 968228	46, Sample: 507646-008 / SMP	Batch	Project ID: 1 Matrix:	SRS#2009-(Water	092	
Units:	mg/L	Date Analyzed: 05/14/15 19:48	SU.	RROGATE R	ECOVERY S	STUDY	
	BTE	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluoro	obenzene		0.0267	0.0300	89	80-120	
4-Bromoflu	orobenzene		0.0268	0.0300	89	80-120	
Lab Batch	#: 968228	Sample: 507646-001 / SMP	Batch	n: 1 Matrix:	Water		
Units:	mg/L	Date Analyzed: 05/14/15 20:04	SU	RROGATE R	ECOVERY S	STUDY	
	BTE	CX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene	Analytes	0.0301	0.0300	100	80-120	
4-Bromoflu	orobenzene		0.0318	0.0300	106	80-120	
Lab Batch	#: 968228	Sample: 507646-005 / SMP	Batch	1 Matrix:	Water	1	
Units:	mg/L	Date Analyzed: 05/14/15 21:11	SU	RROGATE R	ECOVERY S	STUDY	
	BTE	CX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene	v	0.0298	0.0300	99	80-120	
4-Bromoflu	orobenzene		0.0297	0.0300	99	80-120	
Lab Batch	#: 968228	Sample: 507646-003 / SMP	Batch	1: 1 Matrix:	Water		
Units:	mg/L	Date Analyzed: 05/15/15 09:41	SU	RROGATE R	ECOVERY S	STUDY	
	BTE	CX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene	-	0.0307	0.0300	102	80-120	
4-Bromoflu	orobenzene		0.0301	0.0300	100	80-120	
Lab Batch	#: 968228	Sample: 507646-004 / SMP	Batch	n: 1 Matrix:	Water	I	
Units:	mg/L	Date Analyzed: 05/15/15 09:58	SU	RROGATE R	ECOVERY S	STUDY	
	BTE	CX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4 Difluor	1		0.0200			0.0.120	
	obenzene		0.0300	0.0300	1 100	1 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



Project Name: 14" Vac to Jal Legacy

Work Or Lab Batch	rders : 507646 #: 968228	, Sample: 507646-002 / SMP	Batch	Project ID: : 1 Matrix:	SRS#2009-0 Water	092				
Units:	mg/L	Date Analyzed: 05/15/15 10:29	SURROGATE RECOVERY STUDY							
	BTEX	K by EPA 8021	Amount Found [A]	Control Limits %R	Flags					
	I	Analytes								
1,4-Difluor	obenzene		0.0340	0.0300	113	80-120				
4-Bromoflu	orobenzene		0.0305	0.0300	102	80-120				
Lab Batch	#: 968228	Sample: 507646-006 / SMP	Batch	: 1 Matrix:	Water					
Units:	mg/L	Date Analyzed: 05/15/15 10:44	SUI	RROGATE R	ECOVERY S	STUDY				
	BTEX	C by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluor	obenzene	inarytes	0.0315	0.0300	105	80-120				
4-Bromoflu	orobenzene		0.0305	0.0300	102	80-120				
Lab Batch	#: 968228	Sample: 507646-007 / SMP	Batch	: 1 Matrix:	Water	1				
Units:	mg/L	Date Analyzed: 05/15/15 11:00	SUI	RROGATE R	ECOVERY S	STUDY				
	BTEX	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1 4-Difluor	henzene		0.0334	0.0300	111	80.120				
4-Bromoflu	orobenzene		0.0316	0.0300	105	80-120				
Lab Batch	#: 968228	Sample: 692604-1-BLK / BI	K Batch	• 1 Matrix:	Water	00-120				
Units:	mg/L	Date Analyzed: 05/14/15 14:51	SUI	RROGATE R	ECOVERYS	STUDY				
	BTEX	X by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1 4-Difluor	henzene	xnary tes	0.0301	0.0300	100	80.120				
4-Bromoflu	orobenzene		0.0202	0.0300	07	80-120				
Lab Batch	#: 968228	Sample: 692604-1-BKS / BI	KS Batch	• 1 Matrix:	Water	00-120				
Units:	mg/L	Date Analyzed: 05/14/15 15:07	SUI	RROGATE R	ECOVERY	STUDY				
	BTEX	X by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1.4-Difluor	-	v	0.0010							
	obenzene		0.0318	0.0300	1 106	80-120				

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: 14" Vac to Jal Legacy

Work Orders: 507646,		Project ID:	SRS#2009-0	092					
Lab Batch #: 968228 Sample: 692604-1-BSD / B	SD Batch	n: 1 Matrix:	Water						
Units: mg/L Date Analyzed: 05/14/15 15:24	surrogate Recovery study								
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes									
1,4-Difluorobenzene	0.0322	0.0300	107	80-120					
4-Bromofluorobenzene	0.0292	0.0300	97	80-120					
Lab Batch #: 968228 Sample: 507644-001 S / MS	B Batch	n: 1 Matrix:	Water						
Units: mg/L Date Analyzed: 05/14/15 15:40	SURROGATE RECOVERY STUDY								
BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
1,4-Difluorobenzene	0.0321	0.0300	107	80-120					
4-Bromofluorobenzene	0.0301	0.0300	100	80-120					
Lab Batch #: 968228 Sample: 507644-001 SD / N	MSD Batch: 1 Matrix: Water								
Units: mg/L Date Analyzed: 05/14/15 15:57	SU	RROGATE RE	ECOVERY S	STUDY					
BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1.4-Difluorobenzene	0.0321	0.0300	107	80-120					
4.Bromofluorobenzene	0.0306	0.0300	102	80-120					

* Surrogate outside of Laboratory QC limits

- ** Surrogates outside limits; data and surrogates confirmed by reanalysis
- *** Poor recoveries due to dilution
- Surrogate Recovery [D] = 100 * A / B



BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 507646							Pro	ject ID: 🤇	SRS#2009-	092	
Analyst: ARM	Date Prepared: 05/14/2015 Date Analyzed: 05/14/2015										
Lab Batch ID: 968228 Sample: 692604-1-B	SKS	Bate	h #: 1					Matrix: \	Water		
Units: mg/L		BLAN	K /BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUE	ΟY	
BTEX by EPA 8021	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate Posult [F]	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[D]				Kesuit [F]	[0]				
Benzene	< 0.00100	0.100	0.0998	100	0.100	0.0986	99	1	70-125	25	
Toluene	< 0.00200	0.100	0.105	105	0.100	0.103	103	2	70-125	25	
Ethylbenzene	< 0.00100	0.100	0.111	111	0.100	0.109	109	2	71-129	25	
m_p-Xylenes	< 0.00200	0.200	0.222	111	0.200	0.218	109	2	70-131	25	
o-Xylene	< 0.00100	0.100	0.109	109	0.100	0.107	107	2	71-133	25	
Analyst: JUM	D	ate Prepar	ed: 05/17/201	5			Date A	nalyzed: ()5/17/2015		
Lab Batch ID: 968362 Sample: 692702-1-B	KS	Bate	h #: 1					Matrix: V	Water		
Units: mg/L		BLAN	K /BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUI	ΟY	
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<1.00	25.0	24.4	98	25.0	24.7	99	1	90-110	20	

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

XEN	0
Labora	tories

Form 3 - MS Recoveries

Project Name: 14" Vac to Jal Legacy



 Work Order #: 507646

 Lab Batch #:
 968362

 Date Analyzed:
 05/17/2015

 QC- Sample ID:
 507579-001 S

 Reporting Units:
 mg/L

Project ID: SRS#2009-092

 Date Prepared: 05/17/2015
 Analyst: JUM

 Batch #:
 1
 Matrix: Water

	MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag	
Chloride	287	1250	1570	103	80-120		

Matrix Spike Percent Recovery [D] = 100*(C-A)/BRelative Percent Difference [E] = 200*(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: 14" Vac to Jal Legacy



Work Order # :	507646						Project IE): SRS#2	009-092			
Lab Batch ID:	968228	QC- Sample ID:	507644	-001 S	Ba	tch #:	1 Matrix	: Water				
Date Analyzed:	05/14/2015	Date Prepared:	05/14/2	015	An	alyst: A	ARM					
Reporting Units:	mg/L	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	BTEX by EPA 8021	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Benzene		< 0.00100	0.100	0.0985	99	0.100	0.0988	99	0	70-125	25	
Toluene		< 0.00200	0.100	0.104	104	0.100	0.104	104	0	70-125	25	
Ethylbenzene		< 0.00100	0.100	0.110	110	0.100	0.110	110	0	71-129	25	
m_p-Xylenes		<0.00200	0.200	0.219	110	0.200	0.221	111	1	70-131	25	
o-Xylene		< 0.00100	0.100	0.109	109	0.100	0.109	109	0	71-133	25	

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 05/12/2015 01:20:00 PM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Work Order #: 507646

Temperature Measuring device used :

		Comments	
#1 *Temperature of cooler(s)?		3	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping contain	ner/ cooler?	N/A	
#5 Custody Seals intact on sample bottles?		N/A	
#6 *Custody Seals Signed and dated?		N/A	
#7 *Chain of Custody present?		Yes	
#8 Sample instructions complete on Chain of	of Custody?	Yes	
#9 Any missing/extra samples?		No	
#10 Chain of Custody signed when relinquis	hed/ received?	Yes	
#11 Chain of Custody agrees with sample la	abel(s)?	Yes	
#12 Container label(s) legible and intact?		Yes	
#13 Sample matrix/ properties agree with Cl	nain of Custody?	Yes	
#14 Samples in proper container/ bottle?		Yes	
#15 Samples properly preserved?		Yes	
#16 Sample container(s) intact?		Yes	
#17 Sufficient sample amount for indicated	test(s)?	Yes	
#18 All samples received within hold time?		Yes	
#19 Subcontract of sample(s)?		No	
#20 VOC samples have zero headspace (le	ss than 1/4 inch bubble)?	Yes	
#21 <2 for all samples preserved with HNO3 samples for the analysis of HEM or HEM-SG analysts.	3,HCL, H2SO4? Except for T which are verified by the	Yes	
#22 >10 for all samples preserved with NaA	sO2+NaOH, ZnAc+NaOH?	N/A	

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Date: 05/12/2015

Checklist completed by: Mury Moah Kelsey Brooks Checklist reviewed by: Mury Moah Kelsey Brooks

Date: 05/13/2015

RE	Houston: 4142 Cross		CHA	IN O	FCI	UST	JDY R	ECC	RD				P	age 1	of 1			* Container 1	ype Codes
	Hobbs: 4008 N Grime	as Hobbs, NM 88	I, TX 77477 (28 3240 (575)392-	31)240-420 7550	0 Odes	ssa: 1260(West I-20 Eas	dessa,	, TX 79765	(432)563-18	300	LAE	3 W.O	# ;	5	571	346	VA Vial Amber ES VC Vial Clear TS VP Vial Pre-preserved AC GC Glass Amber TB GC Glass Clear 78	Encore Sampler TerraCore Samp Air Canister Tedlar Bag
Idease:	Basin Environmental Service T	echnologies, L	LC	Phone:	(575)396-237	3 TAT V	Vork Da	avs = D	Need re	sulte	hy	Dillable	HIS :	T			PA Plastic Amber PC PC Plastic Clear	Plastic Clear
aaress:	3100 Plains Hwy.			Fax:	(575)	396-142	9	Std (5	5-7D) 5H	trs 1D 2				00 440	11	me:		Other	207 10-1
ty:	Lovington		State: NM	Zip:	8826	0			10/01	ANA		ES DI	FOUE	STED	Othe	r		40mi, 125 ml, 250 ml, 500 ml,	1L, Other
Attn:	Ben Arguijo		Email:	cjbryant(bjarguijo	@paalp.c @basine	om, nv.com	Cont Type	* VP	PC	7 11 11	the F C	TON	LOCE	SIED	u –	T		Preservative	Type Code
oject ID:	14" Vac to Jal Legacy SRS #2009-092			PO#:	PAA-0	C. Bryant	Pres Type*		10			1	-		1-	-		A. None E. HCL I. B. HNO ₃ F. MeOH J.	Ice MCAA
oice To:	Camille Bryant Plains All A	merican		Quote #	ŧ;		E,1	E,I	+		-	-	-		-	-		D. NaOH H. NaHSO4 L O.	Asbc Acid&NaOH
mpler Na Wooley	ame:	Circle One Semi-Annu	Event: Daily al Annual	Weekly N/A	Month	ly Quart	ample s by 826	IEX	oride								Sample Run PAI	A Matrix Typ GW Ground Water S WW Waste Water W	e Codes Soil/Sediment/Solid Wipe
	Sample ID	Collect Date	Collect Time	Matrix Gode ^	Field Fiftered	Integrity OK (Y/N) Total # of	containers EXa Volatile	B	Chlo								Hold (CALL)	DW Drinking Water A SW Surface Water O OW Ocean/Sea Water T PL Product-Liquid U PS Product-Solid B SL Sludge	Air Oil Tissue Urine Blood
1	MW-2	1 Constants	1811	CIM			# COBE	Lab Oni	iy:			-	1	-		1		REMAR	KS
2	MW-3	1510	5117	GW		4		X	X		-	-	-						
3	MW-4	1450	5-845	GW		3					-	-	-						
4	MW-5	1433	2.4.15	GW		3		×				-	-						
5	MW-6	6-11-15	1115	GW		3		X				-	-	-		-			
3	MW-7	511-15	115	GW		3		X						-					
7	MW-8	51/15	955	GW		3		X			-	-		-		-	1		
3	MW-9	5-11-15	1035	GW		3		X			-				1				
-											-				-				
													-						
Reg. TRRP	Program / Clean-up Std DW NPDES LPST DryCln	STATE 1 FL TX GA NO AL NM Other	Or Certs & F	Regs OK LA	QA/ 1 <u>2</u>	QC Leve 3 4 CLF	AFCEE QAP	ition P	ADaPT S	EDDs EDD ERP	IMS	COC & Match Ir	Labels	c	oolers	Temp *	С	Lab Use Only	YES NO N/
B	Relinquished by		Affiliation	on JEnv	D 5.1.	ate 1-15	Time 1501	10	Rec	ceived by		Absent Affilia Mail	Unclear ation	Da	25 le	3 1 5	me	Samples intact upon arrival? Received on Wet Ice? abeled with proper preservatives?	
				_					M	TES	_	Xen	00	5/12	15	13	20	Received within holding time? Custody seals intact? /OCs rec'd w/o headspace? ?mar containers used?	
Labor	storios, Ushka FTF and Far										-				-		F	H verified-acceptable, excl VOCs? Received on time to meet HTs?	

FTS Service Centers: Atlanta 770-449-8800 Lakeland 863-646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099

C.O.C. Serial #

Execution of this document by client creates a legal and binding agreement between client and Xenco for analytical and testing services provided by Xenco to client under Xenco's standard terms and conditions unless previously agreed in writing. Terms of payment are Net 30 days, and all past due amounts shall accrue interest at 1.5% per month until paid in full. All laboratory analytical data and reports generated by Xenco remain the exclusive property of Xenco until invoices for such data are paid in full. Revision Date: Nov 12, 2009

Final 1.000



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 05/12/2015 01:20:00 PM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Work Order #: 507646

#1 *Temperature of cooler(s)?

#3 *Samples received on ice?

Temperature Measuring device used : Comments Sample Receipt Checklist 3 #2 *Shipping container in good condition? Yes Yes #4 *Custody Seals intact on shipping container/ cooler? N/A NI/A

#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	Yes
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Date: 05/12/2015

Checklist completed by: Murshoah Kelsey Brooks Checklist reviewed by: Murshoah

elsey Brooks

Date: 05/13/2015

Analytical Report 513631

for PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

14" Vac to Jal Legacy

2009-092

28-AUG-15

Collected By: Client





12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054) Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135) Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

> Xenco-Lakeland: Florida (E84098) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



28-AUG-15

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

Reference: XENCO Report No(s): **513631 14'' Vac to Jal Legacy** Project Address: Lea County, NM

Ben Arguijo:

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(s) 513631. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 513631 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.

 Kelsey Brooks

 Project Manager

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Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America



Sample Cross Reference 513631



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-2	W	08-10-15 10:20		513631-001
MW-6	W	08-17-15 14:40		513631-002
MW-7	W	08-17-15 14:00		513631-003
MW-9	W	08-17-15 15:20		513631-004


CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S Project Name: 14'' Vac to Jal Legacy

Project ID: 2009-092 Work Order Number(s): 513631
 Report Date:
 28-AUG-15

 Date Received:
 08/18/2015

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Sample Cross Reference 513734



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW #4	W	08-10-15 12:30		513734-001
MW #3	W	08-10-15 11:00		513734-002
MW #5	W	08-10-15 13:00		513734-003
MW #8	W	08-10-15 11:40		513734-004
MW #2	W	08-10-15 10:20		513734-005



CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S Project Name: 14'' Vac to Jal Legacy

Project ID: 2009-092 Work Order Number(s): 513734
 Report Date:
 27-AUG-15

 Date Received:
 08/19/2015

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Project Id: 2009-092 Contact: Ben Arguijo Project Location: Lea County, NM

Certificate of Analysis Summary 513734

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy



Date Received in Lab: Wed Aug-19-15 02:20 pm

Report Date: 27-AUG-15

Project Manager: Kelsey Brooks												
	Lab Id:	513734-	001	513734-0	02	513734-	003	513734-004		513734-005		
Anglucia Deguested	Field Id:	MW #	<i>‡</i> 4	MW #3	MW #3		5	MW #	8	MW #	2	
Analysis Kequestea	Depth:											
	Matrix:	WATE	WATER		WATER		WATER		R	WATER		
	Sampled:	Aug-10-15 12:30		Aug-10-15	11:00	Aug-10-15	13:00	Aug-10-15	11:40	Aug-10-15	10:20	
BTEX by EPA 8021	Extracted:	Aug-21-15	Aug-21-15 15:00		Aug-21-15 15:00 Av		Aug-21-15 15:00		15:00	Aug-21-15	15:00	
	Analyzed:	Aug-21-15	5 19:45	Aug-22-15 (00:23	Aug-21-15	23:31	Aug-22-15	00:06	Aug-21-15	23:48	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	
Benzene		0.181	0.00100	3.19	0.100	ND	0.00100	0.876	0.0500	ND	0.00100	
Toluene		ND	0.00200	ND	0.200	ND	0.00200	ND	0.100	ND	0.00200	
Ethylbenzene		ND	0.00100	ND	0.100	ND	0.00100	ND	0.0500	ND	0.00100	
m_p-Xylenes		0.00701	0.00200	ND	0.200	ND	0.00200	ND	0.100	ND	0.00200	
o-Xylene		ND	0.00100	ND	0.100	ND	0.00100	ND	0.0500	ND	0.00100	
Xylenes, Total		0.00701	0.00100	ND	0.100	ND	0.00100	ND	0.0500	ND	0.00100	
Total BTEX		0.188	0.00100	3.19	0.100	ND	0.00100	0.876	0.0500	ND	0.00100	

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kuns Boah

Kelsey Brooks Project Manager



Project Id: 2009-092 Contact: Ben Arguijo Project Location: Lea County, NM

Certificate of Analysis Summary 513631

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy



Date Received in Lab: Tue Aug-18-15 11:35 am

Report Date: 28-AUG-15

Project Manager: Kelsey Brooks

	Lab Id:	513631-001	513631-002	513631-003	513631-004	
Analysis Paguested	Field Id:	MW-2	MW-6	MW-7	MW-9	
Analysis Requested	Depth:					
	Matrix:	GROUND WATER	GROUND WATER	GROUND WATER	GROUND WATER	
	Sampled:	Aug-10-15 10:20	Aug-17-15 14:40	Aug-17-15 14:00	Aug-17-15 15:20	
BTEX by EPA 8021	Extracted:		Aug-21-15 15:00	Aug-21-15 15:00	Aug-21-15 15:00	
	Analyzed:		Aug-21-15 18:17	Aug-21-15 18:35	Aug-21-15 18:52	
	Units/RL:		mg/L RL	mg/L RL	mg/L RL	
Benzene			ND 0.00100	0.0420 0.00100	ND 0.00100	
Toluene			ND 0.00200	ND 0.00200	ND 0.00200	
Ethylbenzene			ND 0.00100	ND 0.00100	ND 0.00100	
m_p-Xylenes			ND 0.00200	0.00242 0.00200	0.00228 0.00200	
o-Xylene			ND 0.00100	0.00151 0.00100	ND 0.00100	
Xylenes, Total			ND 0.00100	0.00393 0.00100	0.00228 0.00100	
Total BTEX			ND 0.00100	0.0459 0.00100	0.00228 0.00100	
Inorganic Anions Cl by EPA 300/300.1	Extracted:	Aug-21-15 16:00				
SUB: TX104704215	Analyzed:	Aug-24-15 07:19				
	Units/RL:	mg/L RL				
Chloride		11500 200				

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kms Boah

Kelsey Brooks Project Manager



Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect 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 quantitation limit and above the detection limit.
- 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.
- ** Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- **RL** Reporting Limit
- **MDL** Method Detection Limit **SDL** Sample Detection Limit LOD Limit of Detection LOQ Limit of Quantitation **POL** Practical Quantitation Limit MQL Method Quantitation Limit
- **DL** Method Detection Limit
- NC Non-Calculable
- + NELAC certification not offered for this compound.
- (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(281) (214 (210 (813) (432 (770)



Project Name: 14" Vac to Jal Legacy

Units: mg/L Date Analyzed: 08/21/15 18:17 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount [A] True [B] True [B] Control 5%R Flags 5%R 1.4-Difhorobenzene 0.0276 0.0300 99 80-120 4-Bromoflaceobenzene 0.0276 0.0300 99 80-120 1.ab Batch #: 75571 Sample: 513631-003 / SMP Batch: 1 Matrix: Ground Water Units: mg/L Date Analyzed: 08/21/15 18:35 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount [B] Amount [B] Recovery 5%R Control Linnics 5%R Flags 5%R 1.4-Difhorobenzene 0.0299 0.0300 100 80-120 4-Bromoflacrobenzene 0.0277 0.0300 92 80-120 Lab Batch #: 975571 Sample: 513631-004 / SMP Batch: 1 Matrix: Ground Water Units: mg/L Date Analyzed: 08/21/15 18:52 SURROGATE RECOVERY STUDY Analytes [A] [B] SR 5%R 5%R 5%R	Work OI Lab Batch	rders : 513 #: 975571	531, Sample: 513631-002 / SMP	Project ID: 2009-092IPBatch:1Matrix: Ground Water							
BTEX by EPA 8021 Amount Found [A] True Amount [A] True Amount [B] Recovery 5xR [B] Control 5xR 5xR Flags 1.4-Diffuorobenzene 0.0296 0.0300 92 80-120 1 1.4-Diffuorobenzene 0.0296 0.0300 99 80-120 1 1.4b Batch #: 975571 Sample: 513631-003 / SMP Batch: 1 Matrix: Ground Water 1 1.4b Batch #: 975571 Date Analyzed: 08/21/15 18:35 SURROGATE RECOVERY STUDY Control Limits 1 1.4-Diffuorobenzene 0.0299 0.0300 100 80-120 1 1.4-Diffuorobenzene 0.0297 0.0300 100 80-120 1 1.4-Diffuorobenzene 0.0277 0.0300 100 80-120 1 1.4-Diffuorobenzene 0.0273 0.0300 100 80-120 1 1.4-Diffuorobenzene 0.0273 0.0300 90 80-120 1 1.4-Diffuorobenzene 0.0273 0.0300 91 80-120 1 1.4-Diffuorobenzene 0.0273	Units:	mg/L	Date Analyzed: 08/21/15 18:17	SU	RROGATE R	ECOVERYS	STUDY				
Analytes [10] [14] 1.4-Difluorobenzene 0.0276 0.0300 92 80-120 Lab Batch #: 975571 Sample: 513631-003 / SMP Batch: 1 Matrix: Ground Water Units: mg/L Date Analyzed: 08/21/15 18:35 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount Found [A] True Anount Found [A] Recovery [B] Control Limits '9.R Flags 1.4-Difluorobenzene 0.0299 0.0300 92 80-120 -Analytes [A] [B] ''''''' Flags 1.4-Difluorobenzene 0.0297 0.0300 92 80-120 Lab Batch #: 975571 Sample: 513631-004 / SMP Batch: 1 Matrix: Ground Water Units: mg/L Date Analyzed: 08/21/15 18:52 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount Found [A] True Analytes Control Limits (P] Limits '%R Flags 1.4-Difluorobenzene 0.0273 0.0300 91 80-120 Lab Batch #: 975571 Sample: 697295-1-BLK / BLK Batch: 1 Matrix: Water		ВТ	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
1.4-Difluorobenzene 0.0276 0.0300 92 80-120 4-Bromofluorobenzene 0.0296 0.0300 92 80-120 Lab Batch #: 975571 Sample: 513631-003 / SMP Batch: 1 Matrix: Ground Water Units: mg/L Date Analyzed: 08/21/15 18:35 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount [A] True Amount [A] Recovery [B] Control Limits %R Flags 1.4-Difluorobenzene 0.0299 0.0300 100 80-120 - 4-Bromofluorobenzene 0.0297 0.0300 92 80-120 - 1.4-Difluorobenzene 0.0277 0.0300 92 80-120 - 1.4-Bromofluorobenzene 0.0273 0.0300 91 80-120 - Units: mg/L Date Analyzed: 08/21/15 18:52 SURROGATE RECOVERY STUDY - - 1.4-Difluorobenzene 0.0273 0.0300 91 80-120 - 1.4-Difluorobenzene 0.0273 0.0300 97 80-120 - 1.4-Diflu			Analytes								
4-Bronnefhuorobenzene 0.0296 0.0300 99 80-120 Lab Batch #: 975571 Sample: 513631-003 / SMP Batch: 1 Matrix: Ground Water Units: mg/L Date Analyzed: 08/21/15 18:35 SURROGATE RECOVERY STUDY Control BTEX by EPA 8021 Amount [A] True Amount [A] True Amount [B] Recovery [D] Control 1.4-Difluorobenzene 0.0299 0.0300 100 80-120 4-Bronnefluorobenzene 0.0297 0.0300 92 80-120 Lab Batch #: 975571 Sample: 513631-004 / SMP Batch: 1 Matrix: Ground Water Units: mg/L Date Analyzed: 08/21/15 18:52 SURROGATE RECOVERY STUDY Control Lab Batch #: 975571 Sample: 697295-1-BLK / BLK Batch: 1 Marin: %R [P] 1.4-Difluorobenzene 0.0273 0.0300 91 80-120 Control 1.4-Difluorobenzene	1,4-Difluor	obenzene		0.0276	0.0300	92	80-120				
Lab Batch #: 975571 Sample: 513631-003 / SMP Batch: 1 Matrix: Ground Water Units: mg/L Date Analyzed: 08/21/15 18:35 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount [A] Amount [B] True [B] Recovery [V] Control [V] Flags 1.4-Diffuorobenzene 0.0299 0.0300 100 80-120 - 4-Bromofluorobenzene 0.0277 0.0300 92 80-120 - Lab Batch #: 975571 Sample: 513631-004 / SMP Batch: 1 Matrix: Ground Water Units: mg/L Date Analyzed: 08/21/15 18:52 SURROGATE RECOVERY STUDY - BTEX by EPA 8021 Amount [A] Amount [A] True [B] Recovery [V] Control [I, A] Flags 1.4-Diffuorobenzene 0.0291 0.0300 91 80-120 - 4-Bromofluorobenzene 0.0291 0.0300 97 80-120 - 1.4-Diffuorobenzene 0.0291 <td< td=""><td>4-Bromoflu</td><td>orobenzene</td><td></td><td>0.0296</td><td>0.0300</td><td>99</td><td>80-120</td><td></td></td<>	4-Bromoflu	orobenzene		0.0296	0.0300	99	80-120				
Units: mg/L Date Analyzed: 08/21/15 18:35 SURROGATE RECOVERY STUDY BTEX by EPA 8021 (A) Amount Found [A] True Amount [B] Recovery %AR [D] Control Limits %AR [D] Flags 1.4-Difluorobenzene 0.0299 0.0300 100 80-120 - 4-Bromofluorobenzene 0.0277 0.0300 92 80-120 - 4-Bromofluorobenzene 0.0277 0.0300 92 80-120 - Lab Batch #: 975571 Sample: 513631-004 / SMP Batch Matrix: Ground Water Units: mg/L Date Analyzed: 08/21/15 18:52 SURROGATE RECOVERY STUDY - BTEX by EPA 8021 Amount [A] True Amount [B] Recovery %AR [D] Control Limits %AR Flags 1.4-Difluorobenzene 0.0273 0.0300 91 80-120 - Lab Batch #: 975571 Sample: 697295-1-BLK / BLK Batch: 1 Matrix: Water Units: mg/L Date Analyzed: 08/21/15 18:00 SURROGATE RECOVERY STUDY -	Lab Batch	#: 975571	Sample: 513631-003 / SMP	Batcl	h: 1 Matrix:	Ground Wate	er				
BTEX by EPA 8021 Amount Found [A] True Amount [B] True Amount [B] Recovery % R [D] Control Limits % R Flags 1.4-Difluorobenzene 0.0299 0.0300 100 80-120 4-Bronnefluorobenzene 0.0277 0.0300 92 80-120 Lab Batch #: 975571 Sample: 513631-004 / SMP Batch: 1 Matrix: Ground Water Units: mg/L Date Analyzed: 08/21/15 18:52 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount [A] True Anount [A] Recovery Matrix: Ground Water Control Limits % R Flags 1.4-Difluorobenzene 0.0273 0.0300 91 80-120 Limits % R Flags 1.4-Difluorobenzene 0.0273 0.0300 91 80-120 Limits % R Flags 1.4-Difluorobenzene 0.0271 0.0300 97 80-120 Lab Batch #: 975571 Sample: 697295-1-BLK / BLK Batch: 1 Matrix: Water Matrix: Control Limits % R Flags 1.4-Difluorobenzene 0.0304 0.0300 95 80-120 Lab Batch #: 975571 Sample:	Units:	mg/L	Date Analyzed: 08/21/15 18:35	SU	RROGATE RI	ECOVERY	STUDY				
Analytes Analytes Control 1.1 1.4-Diffuorobenzene 0.0299 0.0300 100 80-120 4-Bromoffuorobenzene 0.0277 0.0300 92 80-120 Lab Batch #: 975571 Sample: \$13631-004 / SMP Batch: 1 Matrix: Ground Water Units: mg/L Date Analyzed: 08/21/15 18:52 SURROGATE RECOVERY STUDY Frags Analytes [B] %R [B] 1.4-Diffuorobenzene 0.0273 0.0300 91 80-120 4-Bromoffuorobenzene 0.0273 0.0300 91 80-120 1.4-Diffuorobenzene 0.0291 0.0300 97 80-120 Lab Batch #: 975571 Sample: 697295-1-BLK / BLK Batch: 1 Matrix: Water Units: mg/L Date Analyzed: 08/21/15 18:00 SURROGATE RECOVERY STUDY SurROGATE RECOVERY STUDY BTEX by EPA 8021 Amount Found [A] True Amount [B] Recovery %R Limits %R Flags 1.4-Diffuorobenzene 0.0285 0.0300 95 <t< td=""><td></td><td>BT</td><td>EX by EPA 8021</td><td>Amount Found [A]</td><td>True Amount [B]</td><td>Recovery %R [D]</td><td>Control Limits %R</td><td>Flags</td></t<>		BT	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
Joint Joint <th< td=""><td>1.4-Difluor</td><td>obenzene</td><td>Analytes</td><td>0.0299</td><td>0.0300</td><td>100</td><td>80-120</td><td></td></th<>	1.4-Difluor	obenzene	Analytes	0.0299	0.0300	100	80-120				
Lab Batch #: 975571 Sample: 513631-004 / SMP Batch: 1 Matrix: Ground Water Units: mg/L Date Analyzed: 08/21/15 18:52 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount [A] True Amount [A] Recovery (B] Control Limits %R [D] Flags 1.4-Diffuorobenzene 0.0273 0.0300 91 80-120 4-Bromofluorobenzene 0.0273 0.0300 97 80-120 Lab Batch #: 975571 Sample: 697295-1-BLK / BLK Batch: 1 Matrix: Water Units: mg/L Date Analyzed: 08/21/15 18:00 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount [A] True Amount [A] Control [B] Limits %R [D] Flags 1.4-Diffuorobenzene 0.0285 0.0300 95 80-120 Limits %R [D] Flags 1.4-Diffuorobenzene 0.0285 0.0300 101 80-120 Limits %R [D] Flags 1.4-Diffuorobenzene 0.0304 0.0300 101 80-120 Lab Batch #: 975571 Sample: 697295-1-BKS / BKS Batch: 1 Matrix: Water	4-Bromoflu	orobenzene		0.0277	0.0300	92	80-120				
Units: mg/L Date Analyzed: 08/21/15 18:52 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount Found [A] Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R Flags 1.4-Difluorobenzene 0.0273 0.0300 91 80-120 4-Bromofluorobenzene 0.0291 0.0300 97 80-120 Lab Batch #: 975571 Sample: 697295-1-BLK / BLK Batch: 1 Matrix: Water Units: mg/L Date Analyzed: 08/21/15 18:00 SURROGATE Recovery Recovery Control Limits Flags Matrix: mg/L Date Analyzed: 08/21/15 18:00 SURROGATE Recovery Recovery Control Limits Flags 1.4-Difluorobenzene 0.0285 0.0300 95 80-120 1 1.4-Difluorobenzene 0.0304 0.0300 101 80-120 1 1.4-Difluorobenzene 0.0304 0.0300 101 80-120 1 1.4-	Lab Batch	#: 975571	Sample: 513631-004 / SMP	Batcl	h: 1 Matrix:	Ground Wate	er				
BTEX by EPA 8021 Amount Found [A] True Amount [B] True Amount [B] Control Recovery %R [D] Control Limits %R [D] Flags 1.4-Difluorobenzene 0.0273 0.0300 91 80-120	Units:	mg/L	Date Analyzed: 08/21/15 18:52	SURROGATE RECOVERY STUDY							
I.4-Difluorobenzene 0.0273 0.0300 91 80-120 4-Bromofluorobenzene 0.0291 0.0300 97 80-120 Lab Batch #: 975571 Sample: 697295-1-BLK / BLK Batch: 1 Matrix: Water Units: mg/L Date Analyzed: 08/21/15 18:00 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount [A] True Amount [A] Recovery %R Control Limits %R Flags 1.4-Difluorobenzene 0.0285 0.0300 95 80-120		BT	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
1,4-Diffuorobenzene 0.0273 0.0300 91 80-120 4-Bromofluorobenzene 0.0291 0.0300 97 80-120 Lab Batch #: 975571 Sample: 697295-1-BLK / BLK Batch: 1 Matrix: Water Units: mg/L Date Analyzed: 08/21/15 18:00 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount [A] True [B] Recovery %R Control Limits Flags 1,4-Diffuorobenzene 0.0285 0.0300 95 80-120 4-Bromofluorobenzene 0.0285 0.0300 95 80-120 Lab Batch #: 975571 Sample: 697295-1-BKS / BKS Batch: 1 Matrix: Water Flags Units: mg/L Date Analyzed: 08/21/15 16:49 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount Found [A] True Amount [B] Recovery %R Control Limits Flags 1.4-Diffuorobenzene 0.0306 0.0300 101 80-120 Lab Batch #: 975571 Sample: 697295-1-BKS / BKS Batch: 1 Matrix: Water Units: mg/L Date Analyzed: 08/21/15	140.0	1	Analytes	0.0050	0.0200	[-]	00.100				
4-Bromofulorobenzene 0.0291 0.0300 97 80-120 Lab Batch #: 975571 Sample: 697295-1-BLK / BLK Batch: 1 Matrix: Water Units: mg/L Date Analyzed: 08/21/15 18:00 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount [A] True [A] Matrix: Recovery %R Control Limits %R Flags 1,4-Difluorobenzene 0.0285 0.0300 95 80-120	1,4-Difluor	obenzene		0.0273	0.0300	91	80-120				
Lab Batch #: 975571 Sample: 697295-1-BLK / BLK Batch: 1 Matrix: Water Units: mg/L Date Analyzed: 08/21/15 18:00 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount [A] True [B] Recovery %R [D] Control Limits %R Flags 1,4-Difluorobenzene 0.0285 0.0300 95 80-120 4-Bromofluorobenzene 0.0304 0.0300 101 80-120 Lab Batch #: 975571 Sample: 697295-1-BKS / BKS Batch: 1 Matrix: Water Units: mg/L Date Analyzed: 08/21/15 16:49 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount [A] Found [A] True Amount [B] Recovery %R [D] Control Limits %R Flags %R 1,4-Difluorobenzene 0.0306 0.0300 102 80-120 4-Bromofluorobenzene 0.0306 0.0300 102 80-120 1,4-Difluorobenzene 0.0306 0.0300 102 80-120 1,4-Difluorobenzene 0.0306 0.0300 102 80-120 4-Bromofluorobenzene 0.0318 0.0300 102 80-120	4-Bromollu	lorobenzene	C	0.0291	0.0300	97	80-120				
BTEX by EPA 8021 Amount [A] True Amount [A] Recovery (B] Control Limits %R Flags 1,4-Difluorobenzene 0.0285 0.0300 95 80-120 4-Bromofluorobenzene 0.0304 0.0300 101 80-120 Lab Batch #: 975571 Sample: 697295-1-BKS / BKS Batch: 1 Matrix: Water Units: mg/L Date Analyzed: 08/21/15 16:49 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount Found [A] True (B] Recovery %R [D] Control Limits BTEX by EPA 8021 Amount [A] True [B] Recovery %R [D] Control Limits BTEX by EPA 8021 Amount [A] True [B] Recovery %R [D] Control Limits 1,4-Difluorobenzene 0.0306 0.0300 102 80-120 1,4-Difluorobenzene 0.0306 0.0300 102 80-120	Lab Batch	#: 9/33/1 mg/I	Sample: 09/295-1-BLK / B	BLK BATCH: I MATTIX: Water							
BTEX by EPA 8021Amount Found [A]True Amount [B]Control Limits %RFlags1,4-Difluorobenzene0.02850.03009580-1204-Bromofluorobenzene0.02850.030010180-1204-Bromofluorobenzene0.03040.030010180-120Lab Batch #:975571Sample: 697295-1-BKS / BKSBatch:1Matrix: WaterUnits:mg/LDate Analyzed:08/21/15 16:49SURROGATE RECOVERY STUDYBTEX by EPA 8021Amount Found [A]True AmalytesControl LimitsFlags1,4-Difluorobenzene0.03060.030010280-1204-Bromofluorobenzene0.03060.030010280-120	Units.	ing/L	Date Analyzeu. 06/21/15 18.00	50	RROGATE RI	ECOVERY					
1,4-Difluorobenzene 0.0285 0.0300 95 80-120 4-Bromofluorobenzene 0.0304 0.0300 101 80-120 Lab Batch #: 975571 Sample: 697295-1-BKS / BKS Batch: 1 Matrix: Water Units: mg/L Date Analyzed: 08/21/15 16:49 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount [A] True Amount [A] Recovery %R [D] Control Limits %R Flags 1,4-Difluorobenzene 0.0306 0.0300 102 80-120 4-Bromofluorobenzene 0.0318 0.0300 106 80-120		BT	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
4-Bromofluorobenzene 0.0304 0.0300 101 80-120 Lab Batch #: 975571 Sample: 697295-1-BKS / BKS Batch: 1 Matrix: Water Units: mg/L Date Analyzed: 08/21/15 16:49 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount [A] True [B] Recovery %R [D] Control Limits %R Flags 1,4-Difluorobenzene 0.0306 0.0300 102 80-120 4-Bromofluorobenzene 0.0318 0.0300 106 80-120	1,4-Difluor	obenzene	•	0.0285	0.0300	95	80-120				
Lab Batch #: 975571 Sample: 697295-1-BKS / BKS Batch: 1 Matrix: Water Units: mg/L Date Analyzed: 08/21/15 16:49 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R Flags 1,4-Difluorobenzene 0.0306 0.0300 102 80-120 4-Bromofluorobenzene 0.0318 0.0300 106 80-120	4-Bromoflu	orobenzene		0.0304	0.0300	101	80-120				
Units: mg/L Date Analyzed: 08/21/15 16:49 SURROGATE RECOVERY STUDY BTEX by EPA 8021 Amount [A] True Amount [A] Recovery %R [B] Control Limits %R Flags 1,4-Difluorobenzene 0.0306 0.0300 102 80-120 4-Bromofluorobenzene 0.0318 0.0300 106 80-120	Lab Batch	#: 975571	Sample: 697295-1-BKS / B	KS Batcl	h: 1 Matrix:	Water	1				
BTEX by EPA 8021Amount Found [A]True Amount [B]Control Limits %RFlags1,4-Difluorobenzene0.03060.030010280-1204-Bromofluorobenzene0.03180.030010680-120	Units:	mg/L	Date Analyzed: 08/21/15 16:49	SU	RROGATE RI	ECOVERY	STUDY				
1,4-Difluorobenzene 0.0306 0.0300 102 80-120 4-Bromofluorobenzene 0.0318 0.0300 106 80-120		BT	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
4-Bromofluorobenzene 0.0318 0.0300 106 80-120	1,4-Difluor	obenzene		0.0306	0.0300	102	80-120				
	4-Bromoflu	lorobenzene		0.0318	0.0300	102	80-120				

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: 14" Vac to Jal Legacy

Work Orders :	513631,		Project ID:	2009-092					
Lab Batch #: 97557	Sample: 697295-1-BSD / B	SD Batch	n: 1 Matrix:	Water					
Units: mg/L	Date Analyzed: 08/21/15 17:07	SURROGATE RECOVERY STUDY							
	BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
14 Different engen	Analytes	0.0215	0.0200	105	00.100				
1,4-Diffuorobenzene		0.0315	0.0300	105	80-120				
4-Bromofluorobenzen	2	0.0320	0.0300	107	80-120				
Lab Batch #: 97557	Sample: 513631-002 S / MS	S Batch: 1 Matrix: Ground Water							
Units: mg/L	Date Analyzed: 08/21/15 17:24	SU	RROGATE RE	ECOVERY S	STUDY				
	BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene		0.0320	0.0300	107	80-120				
4-Bromofluorobenzen	ð	0.0303	0.0300	101	80-120				

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 513631							Pro	ject ID: 2	2009-092		
Analyst: PJB	D	Date Prepared: 08/21/2015 Date Analyzed: 08/21/2015									
Lab Batch ID: 975571 Sample: 697295-1-E	BKS	Bate	h #: 1					Matrix: \	Water		
Units: mg/L		BLAN	K/BLANK	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUI	ΟY	
BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0804	80	0.100	0.0818	82	2	70-125	25	
Toluene	<0.00100	0.100	0.0809	81	0.100	0.0827	83	2	70-125	25	
Ethylbenzene	< 0.00100	0.100	0.0852	85	0.100	0.0878	88	3	71-129	25	
m_p-Xylenes	< 0.00200	0.200	0.172	86	0.200	0.177	89	3	70-131	25	
o-Xylene	< 0.00100	0.100	0.0883	88	0.100	0.0902	90	2	71-133	25	
Analyst: JUM Lab Batch ID: 975356 Sample: 697003-1-E	D BKS	ate Prepar Bate	red: 08/21/201 h #: 1	5			Date A	nalyzed: (Matrix: \)8/24/2015 Water		
Units: mg/L		BLAN	K/BLANK	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUE	θY	
Inorganic Anions Cl by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<1.00	25.0	27.5	110	25.0	27.4	110	0	90-110	20	

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

YCHICA
TENCO
Laboratories

Form 3 - MS Recoveries

Control

Limits

%R

70-125

70-125

71-129

70-131

71-133

Flag

Project Name: 14" Vac to Jal Legacy

Work Order #: 513631 **Project ID:** ²⁰⁰⁹⁻⁰⁹² Lab Batch #: 975571 Date Analyzed: 08/21/2015 **Date Prepared:** 08/21/2015 Analyst: PJB QC- Sample ID: 513631-002 S Batch #: Matrix: Ground Water 1 **Reporting Units:** mg/L MATRIX / MATRIX SPIKE RECOVERY STUDY Parent Spiked Sample BTEX by EPA 8021B Sample Spike Result %R Result Added [C] [**D**] [A] [B] Analytes < 0.00100 Benzene 0.100 0.0811 81 Toluene < 0.00200 0.100 0.0803 80 < 0.00100 Ethylbenzene 0.100 0.0857 86 m p-Xylenes < 0.00200 0.200 0.172 86 o-Xylene < 0.00100 0.100 0.0865 87 Lab Batch #: 975356 Date Analyzed: 08/24/2015 Date Prepared: 08/21/2015 Analyst: JUM QC- Sample ID: 513631-001 S Batch #: 1 Matrix: Ground Water Reporting Units: mg/L MATRIX / MATRIX SPIKE RECOVERY STUDY Г

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag		
Chloride	11500	5000	15900	88	80-120			

Matrix Spike Percent Recovery [D] = 100*(C-A)/B Relative Percent Difference [E] = 200*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



Project Name: 14" Vac to Jal Legacy

Work Orde Lab Batch #:	rs : 5137 975571	34, Sample: 513734-001 / SMP	Project ID: 2009-092 Batch: 1 Matrix: Water							
Units:	mg/L	Date Analyzed: 08/21/15 19:45	SU	RROGATE RI	ECOVERY S	STUDY				
	BTI	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1,4-Difluoroben	zene		0.0352	0.0300	117	80-120				
4-Bromofluorob	enzene		0.0293	0.0300	98	80-120				
Lab Batch #:	975571	Sample: 513734-003 / SMP	Batc	h: 1 Matrix:	Water					
Units:	mg/L	Date Analyzed: 08/21/15 23:31	SU	RROGATE RI	ECOVERY S	STUDY				
	BTI	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluoroben	zene		0.0280	0.0300	93	80-120				
4-Bromofluorob	enzene		0.0262	0.0300	87	80-120				
Lab Batch #:	975571	Sample: 513734-005 / SMP	Batc	h: 1 Matrix:	Water	1				
Units:	mg/L	Date Analyzed: 08/21/15 23:48	SURROGATE RECOVERY STUDY							
	BTI	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1 4-Difluoroben	zene		0.0292	0.0300	97	80-120				
4-Bromofluoroh	enzene		0.0315	0.0300	105	80-120				
Lab Batch #:	975571	Sample: 513734-004 / SMP	Batc	h: 1 Matrix:	Water	00 120				
Units:	mg/L	Date Analyzed: 08/22/15 00:06	SU	RROGATE RI	ECOVERY	STUDY				
	BTI	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1,4-Difluoroben	zene		0.0284	0.0300	95	80-120				
4-Bromofluorob	enzene		0.0300	0.0300	100	80-120				
Lab Batch #:	975571	Sample: 513734-002 / SMP	Batc	h: 1 Matrix:	Water					
Units:	mg/L	Date Analyzed: 08/22/15 00:23	SU	RROGATE RI	ECOVERY S	STUDY				
	BTI	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes								
1,4-Difluoroben	zene		0.0301	0.0300	100	80-120				
4-Bromofluorob	oenzene		0.0295	0.0300	98	80-120				

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: 14" Vac to Jal Legacy

Work Or	rders: 5137	734, Sample: 697295-1-BLK / B	IK Batel	Project ID:	2009-092 Water					
Units:	mg/L	Date Analyzed: 08/21/15 18:00	SU	PROCATE PE	COVERV	STUDV				
	BT	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluor	obenzene		0.0285	0.0300	95	80-120				
4-Bromoflu	orobenzene		0.0304	0.0300	101	80-120				
Lab Batch	#: 975571	Sample: 697295-1-BKS / B	KS Batch	n: 1 Matrix:	Water					
Units:	mg/L	Date Analyzed: 08/21/15 16:49	SU	RROGATE RE	ECOVERY S	STUDY				
	BT	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluor	obenzene		0.0306	0.0300	102	80-120				
4-Bromoflu	orobenzene		0.0318	0.0300	106	80-120				
Lab Batch	#: 975571	Sample: 697295-1-BSD / B	SD Batch	n: 1 Matrix:	Water					
Units:	mg/L	Date Analyzed: 08/21/15 17:07	SURROGATE RECOVERY STUDY							
	BT	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1 4-Difluor	ohenzene		0.0315	0.0300	105	80.120				
4-Bromoflu	orobenzene		0.0319	0.0300	107	80-120				
Lab Batch	#: 975571	Sample: 513631-002 S / MS	Batch	n: 1 Matrix:	Ground Wate	r				
Units:	mg/L	Date Analyzed: 08/21/15 17:24	SU	RROGATE RE	ECOVERY S	STUDY				
	BT	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluor	obenzene	-	0.0320	0.0300	107	80-120				
4-Bromoflu	orobenzene		0.0303	0.0300	101	80-120				
•										

* Surrogate outside of Laboratory QC limits

- ** Surrogates outside limits; data and surrogates confirmed by reanalysis
- *** Poor recoveries due to dilution
- Surrogate Recovery [D] = 100 * A / B



BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 513734							Proj	ject ID: 2	2009-092		
Analyst: PJB	D	ate Prepar	ed: 08/21/201	5			Date A	nalyzed: (08/21/2015		
Lab Batch ID: 975571 Sample: 697295-1-B	KS	Bate	h #: 1					Matrix: V	Water		
Units: mg/L		BLAN	K /BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUI	ΟY	
BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	< 0.00100	0.100	0.0804	80	0.100	0.0818	82	2	70-125	25	
Toluene	< 0.00200	0.100	0.0809	81	0.100	0.0827	83	2	70-125	25	
Ethylbenzene	< 0.00100	0.100	0.0852	85	0.100	0.0878	88	3	71-129	25	
m_p-Xylenes	< 0.00200	0.200	0.172	86	0.200	0.177	89	3	70-131	25	
o-Xvlene	<0.00100	0.100	0.0992	00	0.100	0.0002	0.0	2	71 122	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



Benzene

Toluene

Ethylbenzene

m p-Xylenes

o-Xylene

Form 3 - MS Recoveries



Project Name: 14" Vac to Jal Legacy

< 0.00100

< 0.00200

< 0.00100

 Work Order #: 513734

 Lab Batch #: 975571

 Date Analyzed: 08/21/2015

 QC- Sample ID: 513631-002 S

 Reporting Units: mg/L

Project ID: ²⁰⁰⁹⁻⁰⁹²

86

86

87

71-129

70-131

71-133

Date Prepared: 08/21/2015 Analyst: PJB Batch #: Matrix: Ground Water 1 MATRIX / MATRIX SPIKE RECOVERY STUDY Parent Spiked Sample Control BTEX by EPA 8021B Sample Spike Result %R Limits Flag Result Added [C] [**D**] %R [A] [B] Analytes < 0.00100 70-125 0.100 0.0811 81 < 0.00200 0.100 0.0803 80 70-125

0.100

0.200

0.100

0.0857

0.172

0.0865

Matrix Spike Percent Recovery [D] = 100*(C-A)/BRelative Percent Difference [E] = 200*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Company-City Basin Shu Project Name-Location <u>IAN</u> Uac A Proj. State: TX, AL, FL, C U, PA, SC, TN, UT Othe -mail Results to <u>Shua H@paalp</u> results to <u>I</u> <u>Shua H@paalp</u> <u>Shua H@pa</u>	Previous Previous to Sal Leg GA, LA, MS, NC, er PM and <u>COW</u> by and <u>COW</u> by and <u>COW</u> by and <u>COW</u> by <u>COW</u> by	Proj. Mana Mith Final Rep Proj. No: -Fill Waste- Y DOE DO s See Lab P	Chille ENCO SHAC SHAC SHAC Port □ Disp N OD US	NPDE SACE	F SG2 F AD.C S DV	ax No: Signation Signatio	-394- a P.O.	378	La TA It is SVON SHO	T: A s typic	l y: SAP ally 5	5-7 W T-57	2h 2 orkir	24h ng Da Zxpddy	48h ys fo	3d E	d 7d	10d 10+ Wo	21d Sta orking da	andard 1 ays for I	TAT is p evel III	project and PLZ	ot spe IV dat	cific. a.	Remar	ks
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ampler Name		Signatur	re						TEX	DW	D B D		CBs	SCR	etals							12h		char	are	te
Sample ID	Sampling Date	Time	lepth 7 In" m	latrix omposite	Containance	ontainer Size	ontainer Type	reservatives	OA: Full-List B	OA: PP TCL	X-1005 DRO	VOCs: Full-List	C Pesticides P	letals: RCRA-8	PLP-TCLP (M	DB / DBCP						ATASAP 5h	idn: PAH above	old Samples (Sur	ample Clean-ups	ldn: Da
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				4)	N	TE	R	19.00	Just	vice	8	-19.	·K	147	Du	intil pai	I. Same	les will	he held 1	30 davs	after fin	nal rec	ort is	e-ma	ailed unless	

Preservatives: Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), Asbc Acid&NaOH (A), ZnAc&NaOH (Z), (Cool, <4C) (C), None (NA), See Label (L), Other (O) ______ Cont. Size: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (40), 1L (1), 500ml (5), Tedlar Bag (B), Various (V), Other _____ Cont. Type: Glass Amb (A), Glass Clear (C), Plastic (P), Various (V)

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Matrix: Air (A), Product (P), Solid (S), Water (W), Liquid (L)

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/Atto:	Lovington	_	State: NA	A Zip:	882	260		1		-/D) 5	Hrs 1	D 2D 3	D 4D 5	5D 7D	10D 14	D Oth	er		Size(s): 2oz, 4oz, 8oz, 16oz, 32 40ml, 125 ml, 250 ml, 500 ml,	oz , 1Gal 1L, Other
in the second	Ben Arguijo		Email:	cjbryan	t@paalp	.com,	_	Cont Type '	1	-	F	NALY	SES F	REQU	ESTEC)			** Preservative 1	Type Code
ject ID:	14" Vac to Jal Legacy SRS #2009-092			PO#:	Dasin	nenv.com		VC Proc Turett	VP	PC	-	-			-				A. None E. HCL I.	lce
pice To:	Camille Bryant Plains A	II American		Quote	#:	-C. Bryan	it	E, I	E,1	1	-	-				-			B. HNO ₃ F. MeOH J. H ₂ SO ₄ G. Na ₂ S ₂ O ₃ K. Zn D. NaOH H. NaHSO ₄ L O	MCAA Ac&NaOH Asbc Acid&NaC
npler Na	ame:	Circle One Semi-Annu	Event: Dail al Annual	y Weekly N/A	Mont	thly Qua	irtely	ample s by 8260	EX	oride								ample Run PAH	A Matrix Type	Codes
	Sample ID	Collect Date	Collect Time	Matrix Code /	Field	Integrity OK (Y/N) Total # of	containers	Exa Volatile:	B1	Chic								Hotd S ALL	DW Drinking Water A A SW Surface Water O C OW Ocean/Sea Water T T PL Product-Liquid U U PS Product-Solid B B	vipe kir issue Irine lood
	MW-2	8-10-15	10:70	CW				# Cont	Lab Only	c.							_	0.5	Other	KS
	MW-3	R.c.	- 111:00	GW	-		4		Х	X	-			-	1					
	MW-4	0-0-0	01005	GVV			3		X											
		0-10-15	(2:20	GW		3	3		X							1				
	1010-5	R-10-1	5 (3:00)	GW		3	3		X			1			1	1	1			_
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Reg. F	Program / Clean-up Std	STATE	- C. I																dic	
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	Relinquished by	AL NM Other:	Affiliatio	10	VELAC	DoD-ELAP	P Othe	r: CAPP	AI XL	DaPT S S Other:	EDD E	RPIMS	Match In Absent	Unclear	5.8	2	24	4.07.	Ion-Conformances found?	
B	ill Wooley		Same S	iacl	C. so	ale		Time	-	Rec	eived I	бу	Affilia	ation	Da	ite	Ti	me F	amples intact upon arrival? Received on Wet Ice?	
	/		and CI	10	0-17	-15	-	1630	Ra	rale	Kese	Non	M	5	8-17	7-05	16:	30 1	abeled with proper preservatives? eceived within holding time?	
							-		-14	uit	ne	R	1		8-18	.15	11.0	50	ustody seals intact? OCs rec'd w/o headspace?	
			-				-								-			P	roper containers used?	

-646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099 4 Phoenix 602-437-0330 Execution of this document by client creates a legal and binding agreement between client and Xenco for analytical and testing services provided by Xenco to client under Xenco's standard terms and conditions unless previously agreed in writing. Terms of payment are Net 30 days, and all past due amounts shall accrue interest at 1.5% per month until paid in full. All laboratory analytical data and reports generated by Xenco remain the exclusive property of Xenco until invoices for such data are paid in full. Revision Date: Nov 12, 2009

C.O.C. Serial #

Final 1.000

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XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 08/18/2015 11:35:00 AM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Work Order #: 513631

Temperature Measuring device used :

	Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5.8	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping contain	ner/ cooler? N/A	
#5 Custody Seals intact on sample bottles?	N/A	
#6 *Custody Seals Signed and dated?	N/A	
#7 *Chain of Custody present?	Yes	
#8 Sample instructions complete on Chain o	f Custody? Yes	
#9 Any missing/extra samples?	No	
#10 Chain of Custody signed when relinquis	hed/ received? Yes	
#11 Chain of Custody agrees with sample la	bel(s)? Yes	
#12 Container label(s) legible and intact?	Yes	
#13 Sample matrix/ properties agree with Ch	nain of Custody? Yes	
#14 Samples in proper container/ bottle?	Yes	
#15 Samples properly preserved?	Yes	
#16 Sample container(s) intact?	Yes	
#17 Sufficient sample amount for indicated to	est(s)? Yes	
#18 All samples received within hold time?	Yes	
#19 Subcontract of sample(s)?	No	
#20 VOC samples have zero headspace (les	ss than 1/4 inch bubble)? Yes	
#21 <2 for all samples preserved with HNO3 samples for the analysis of HEM or HEM-SG analysts.	HCL, H2SO4? Except for Yes T which are verified by the	
#22 >10 for all samples preserved with NaAs	sO2+NaOH, ZnAc+NaOH? N/A	

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Date: 08/18/2015

Checklist completed by: Murshvah Kelsey Brooks Checklist reviewed by: Murshvah Kelsey Brooks

Date: 08/20/2015

Analytical Report 521067

for PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

14" Vac to Jal Legacy

2009-092

16-DEC-15

Collected By: Client





12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054) Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135) Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

> Xenco-Lakeland: Florida (E84098) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



16-DEC-15

State State

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

Reference: XENCO Report No(s): **521067 14'' Vac to Jal Legacy** Project Address: Lea County, NM

Ben Arguijo:

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(s) 521067. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 521067 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,

Kuns

Kelsey Brooks Project Manager

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Sample Cross Reference 521067



PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-2	W	12-08-15 11:30		521067-001
MW-3	W	12-08-15 10:40		521067-002
MW-4	W	12-08-15 08:20		521067-003
MW-5	W	12-07-15 10:30		521067-004
MW-6	W	12-07-15 11:15		521067-005
MW-7	W	12-08-15 10:00		521067-006
MW-8	W	12-08-15 11:25		521067-007
MW-9	W	12-08-15 09:00		521067-008



CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: 14" Vac to Jal Legacy

Project ID: 2009-092 Work Order Number(s): 521067
 Report Date:
 16-DEC-15

 Date Received:
 12/10/2015

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Project Id:2009-092Contact:Ben ArguijoProject Location:Lea County, NM

Certificate of Analysis Summary 521067 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy



Date Received in Lab:Thu Dec-10-15 12:30 pmReport Date:16-DEC-15Project Manager:Kelsey Brooks

	Lab Id:	521067	-001	521067-	002	521067-	003	521067-	004	521067-	005	521067-	006
Analysis Paguastad	Field Id:	MW	-2	MW-	3	MW-	4	MW-	5	MW-	5	MW-	7
Analysis Kequestea	Depth:												
	Matrix:	GROUND	WATER	GROUND V	VATER	GROUND V	WATER	GROUND V	VATER	GROUND V	VATER	GROUND V	VATER
	Sampled:	Dec-08-15	5 11:30	Dec-08-15	10:40	Dec-08-15	08:20	Dec-07-15	10:30	Dec-07-15	11:15	Dec-08-15	10:00
BTEX by EPA 8021	Extracted:	Dec-14-15	5 15:00	Dec-14-15	15:00	Dec-14-15	15:00	Dec-14-15	15:00	Dec-14-15	15:00	Dec-14-15	15:00
	Analyzed:	Dec-15-15	Dec-15-15 01:52		Dec-15-15 10:21		02:25	Dec-15-15	10:05	Dec-15-15	02:59	Dec-15-15	03:16
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		0.0232	0.00100	0.00212	0.00100	0.240	0.00100	ND	0.00100	ND	0.00100	0.00468	0.00100
Toluene		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
Ethylbenzene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
m_p-Xylenes		ND	0.00200	ND	0.00200	0.0107	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Xylenes, Total		ND	0.00100	ND	0.00100	0.0107	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total BTEX		0.0232	0.00100	0.00212	0.00100	0.251	0.00100	ND	0.00100	ND	0.00100	0.00468	0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-15-15	5 12:47										
	Analyzed:	Dec-15-15	5 12:47										
	Units/RL:	mg/L	RL										
Chloride		8640	200										

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Huns Boah

Kelsey Brooks Project Manager



Project Id:2009-092Contact:Ben ArguijoProject Location:Lea County, NM

Certificate of Analysis Summary 521067

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy



Date Received in Lab:Thu Dec-10-15 12:30 pmReport Date:16-DEC-15Project Manager:Kelsey Brooks

	Lab Id:	521067-	007	521067-	008		
Analysis Deguested	Field Id:	MW-	8	MW-	9		
Analysis Kequesiea	Depth:						
	Matrix:	GROUND V	VATER	GROUND V	VATER		
	Sampled:	Dec-08-15	11:25	Dec-08-15	09:00		
BTEX by EPA 8021	Extracted:	Dec-14-15	15:00	Dec-14-15	15:00		
	Analyzed:	Dec-15-15	03:31	Dec-15-15	15:29		
	Units/RL:	mg/L	RL	mg/L	RL		
Benzene		0.0262	0.00100	ND	0.00100		
Toluene		ND	0.00200	ND	0.00200		
Ethylbenzene		ND	0.00100	ND	0.00100		
m_p-Xylenes		ND	0.00200	0.00510	0.00200		
o-Xylene		ND	0.00100	ND	0.00100		
Xylenes, Total		ND	0.00100	0.00510	0.00100		
Total BTEX		0.0262	0.00100	0.00510	0.00100		

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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Huns Boah

Kelsey Brooks Project Manager



Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect 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 quantitation limit and above the detection limit.
- 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.
- ** Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- RL Reporting Limit
- MDL Method Detection LimitSDL Sample Detection LimitLOD Limit of DetectionPQL Practical Quantitation LimitMQL Method Quantitation LimitLOQ Limit of Quantitation
- **DL** Method Detection Limit
- NC Non-Calculable
- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(210) 509-3335

(813) 620-2033

(432) 563-1713

(770) 449-5477



Project Name: 14" Vac to Jal Legacy

Work Or Lab Batch	rders : 5210 #: 983560	67, Sample: 521067-001 / SMP	Batch	Project ID: 1 Matrix:	2009-092 Ground Wate	er	
Units:	mg/L	Date Analyzed: 12/15/15 01:52	SU	RROGATE RI	ECOVERY S	STUDY	
	BT	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes					
1,4-Difluoro	obenzene		0.0355	0.0300	118	80-120	
4-Bromoflu	orobenzene		0.0291	0.0300	97	80-120	
Lab Batch	#: 983560	Sample: 521067-003 / SMP	Batch	n: 1 Matrix:	Ground Wate	er	
Units:	mg/L	Date Analyzed: 12/15/15 02:25	SU	RROGATE RI	ECOVERYS	STUDY	
	BT	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene	Analytes	0.0351	0.0300	117	80-120	
4-Bromoflu	orobenzene		0.0250	0.0300	83	80-120	
Lab Batch	#: 983560	Sample: 521067-005 / SMP	Batch	n: 1 Matrix:	Ground Wate	r	
Units:	mg/L	Date Analyzed: 12/15/15 02:59	SU	RROGATE RI	ECOVERY S	STUDY	
	BT	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene	٠ -	0.0356	0.0300	119	80-120	
4-Bromoflu	orobenzene		0.0305	0.0300	102	80-120	
Lab Batch	#: 983560	Sample: 521067-006 / SMP	Batch	n: 1 Matrix:	Ground Wate	r	
Units:	mg/L	Date Analyzed: 12/15/15 03:16	SU	RROGATE RI	ECOVERY	STUDY	
	BT	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene		0.0347	0.0300	116	80-120	
4-Bromoflu	orobenzene		0.0312	0.0300	104	80-120	
Lab Batch	#: 983560	Sample: 521067-007 / SMP	Batch	n: 1 Matrix:	Ground Wate	er	
Units:	mg/L	Date Analyzed: 12/15/15 03:31	SU	RROGATE RI	ECOVERY S	STUDY	
	BT	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene		0.0353	0.0300	118	80-120	
4-Bromoflu	orobenzene		0.0272	0.0300	91	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



Project Name: 14" Vac to Jal Legacy

Work Or Lab Batch	ders : 5210 #: 983560	067, Sample: 521067-004 / SMP	Batch	Project ID: h: 1 Matrix:	2009-092 Ground Wate	er	
Units:	mg/L	Date Analyzed: 12/15/15 10:05	SU	RROGATE R	ECOVERY	STUDY	
	BT	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
140.0	1	Analytes	0.0222	0.0200		00.100	
1,4-Difluoro	obenzene		0.0323	0.0300	108	80-120	
4-Bromoliu	4. 082560	Semples 521067-002 / SMD	0.0287	0.0300	96 Ground Wate	80-120	
	#: 905500	Sample: 321007-0027 SMF	Datei		Glound wate	71	
Units:	mg/L	Date Analyzed: 12/15/15 10:21	SU	RROGATE R	ECOVERY	STUDY	
	BT	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 4-Difluoro	benzene	Analytes	0.0354	0.0300	118	80-120	
4-Bromoflu	orobenzene		0.0300	0.0300	100	80-120	
Lab Batch	#: 983560	Sample: 521067-008 / SMP	Batch	$\frac{1}{1} = \frac{1}{1}$	Ground Wate	er	
Units:	mg/L	Date Analyzed: 12/15/15 15:29	SU	RROGATE R	ECOVERY	STUDY	
	BT	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene		0.0327	0.0300	109	80-120	
4-Bromoflu	orobenzene		0.0294	0.0300	98	80-120	
Lab Batch	#: 983560	Sample: 702211-1-BLK / B	LK Batch	h: 1 Matrix:	Water	1	
Units:	mg/L	Date Analyzed: 12/14/15 22:00	SU	RROGATE R	ECOVERY	STUDY	
	BT	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene		0.0340	0.0300	113	80-120	
4-Bromoflu	orobenzene		0.0282	0.0300	94	80-120	
Lab Batch	#: 983560	Sample: 702211-1-BKS / B	KS Batcl	h: 1 Matrix:	Water		·
Units:	mg/L	Date Analyzed: 12/14/15 21:09	SU	RROGATE R	ECOVERY	STUDY	
	BT	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene		0.0328	0.0300	109	80-120	
4-Bromoflu	orobenzene		0.0265	0.0300	88	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: 14" Vac to Jal Legacy

Work Ord	ders : 5210	67,		Project ID:	2009-092								
Lab Batch #	#: 983560	Sample: 702211-1-BSD / B	SD Batch	n: 1 Matrix:	Water								
Units:	mg/L	Date Analyzed: 12/14/15 21:26	SURROGATE RECOVERY STUDY										
	BTH	EX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
1.4-Difluorol	penzene	Anaryus	0.0333	0.0300	111	80-120							
4-Bromofluor	robenzene		0.0267	0.0300	89	80-120							
Lab Batch #	#: 983560	Sample: 520899-010 S / MS	S Batch	n: 1 Matrix:	Water	1							
Units:	mg/L	Date Analyzed: 12/15/15 00:12	SU	RROGATE RI	ECOVERY S	STUDY							
	BTH	EX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
1,4-Difluorob	oenzene		0.0355	0.0300	118	80-120							
4-Bromofluor	robenzene		0.0256	0.0300	85	80-120							

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



BS / BSD Recoveries



Project Name: 14" Vac to Jal Legacy

Work Order #: 521067							Pro	ject ID: 2	2009-092		
Analyst: SYG	D	ate Prepar	ed: 12/14/201	5			Date A	nalyzed: 1	2/14/2015		
Lab Batch ID: 983560 Sample: 702211-1-	BKS	Bate	h #: 1					Matrix: \	Water		
Units: mg/L		BLAN	K /BLANK	SPIKE / I	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY STUE	ΟY	
BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	< 0.00100	0.100	0.0878	88	0.100	0.0876	88	0	70-125	25	
Toluene	< 0.00200	0.100	0.0864	86	0.100	0.0865	87	0	70-125	25	
Ethylbenzene	< 0.00100	0.100	0.0899	90	0.100	0.0906	91	1	71-129	25	
m_p-Xylenes	< 0.00200	0.200	0.186	93	0.200	0.188	94	1	70-131	25	
o-Xylene	< 0.00100	0.100	0.0896	90	0.100	0.0906	91	1	71-133	25	
Analyst: MNR	DVG	ate Prepar	ed: 12/15/201	5			Date A	nalyzed:	2/15/2015		
Units: mg/L	BKS	BLAN	n #: 1	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUE	DY	
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<1.00	25.0	23.3	93	25.0	23.1	92	1	90-110	20	

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



Analytes

Form 3 - MS Recoveries

Project Name: 14" Vac to Jal Legacy

Date Prepared: 12/14/2015



Work Order #: 521067 Lab Batch #: 983560 Date Analyzed: 12/15/2015 QC- Sample ID: 520899-010 S **Reporting Units:** mg/L

Project ID: ²⁰⁰⁹⁻⁰⁹² Analyst: SYG

Batch #: Matrix: Water 1 MATRIX / MATRIX SPIKE RECOVERY STUDY Parent Spiked Sample Control BTEX by EPA 8021B Sample Spike Result %R Limits Flag Result Added [C] [**D**] %R [A] [B] 0.00838 0.100 0.0966 88 70-125 < 0.00200 0.100 0.0805 70-125 81 0.00188 0.100 0.0890 87 71-129 0.00323 0.200 0.182 89 70-131 < 0.00100 0.100 0.0850 85 71-133 Date Prepared: 12/15/2015 Analyst: MNR

Date Analyzed: 12/15/2015

QC- Sample ID: 521067-001 S

983545

Batch #: 1

Matrix: Ground Water

Reporting	Units:	mg/L
-----------	--------	------

Benzene

Toluene

Ethylbenzene

m p-Xylenes

Lab Batch #:

o-Xylene

Reporting Units: mg/L	MATRIX / MATRIX SPIKE RECOVERY STUDY							
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag		
Chloride	8640	5000	13200	91	80-120			

Matrix Spike Percent Recovery [D] = 100*(C-A)/B Relative Percent Difference [E] = 200*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Labo Diditionsember	Houston: 4143 Gree Hobbs: 4008 N Grim	enbriar Dr. Stafford, Nes Hobbs, NM 88:	CHAI TX 77477 (281 240 (575)392-7	N OI	F CL Odess	JST a: 12600	ODY West I-20	REC(East Odessa,	DRE TX 7976	5 (432)563-180	9	LAB W	Pa V.O # able I	ge <u>1_of</u> 1 #: <u>51</u> Hrs:	1067	Container Type Codes VA Vial Amber ES Encore Sampler VC Vial Clear TS TerraCore Sam VP Vial Prepreserved AC Air Canister GA Glass Amber TB Tediar Bag GC Glass Clear ZB Zip Lock Bag
Address:	Basili Erivironmental Service	Technologies, L	LC	Phone:	(575)	396-237	8 TA	T Work D	ays =	D Need re	sults t	by:		Т	me:	PA Plastic Amber PC Plastic Clear PC Plastic Clear Other
lity:	3100 Plains Hwy.		1	Fax:	(575):	396-142	9	Std (5-7D)	5Hrs 1D 21	D 3D	4D 5D 7	D 10	ID 14D Othe		Size(s): 2oz, 4oz, 8oz, 16oz, 32oz, 1Gal
M/Atto:	Lovington		State: NM	Zip:	88260)				ANA	LYSI	ES REO	UES	TED	10.00	40ml, 125 ml, 250 ml, 500 ml, 1L, Other
roject ID	Ben Arguijo		Email:	bjarguijo	@paalp.co @basinen	om, Iv.com	Cont	VF	P	c		1 1				A None E NCL Line
roject ib	SRS #2009-092			PO#:	PAA-C	. Bryant	Pres	Type								B. HNO3 F. MeOH J. MCAA C. H-SO4 G. Na-S40. K. ZnAC&NaOH
ivolce To	Camille Bryant Plains All	American		Quote #	<i>ŧ</i> :			<u>Е,</u>			_		-			D. NaOH H. NaHSO4 L Asbc Acid&NaC
ampler N Il Woole	lame: Y	Circle One Quartely	Event: Daily Semi-Annual	Weekly Annual	Month N/A	ly	eiubie	TEX	oride						Sample Run FA	A Matrix Type Codes GW Ground Water S Soll/Sediment/Soll WW Waste Water W Wipe
ample#	Sample ID	Collect Date	Collect Time	Mairce Code ^	Filtered	ok tytel OK tytel	EXe	volatile	Chi						Hald	S DW Drinking Water A Air SW Surface Water O Oil OW Occan/Sea Water T Tissue PL Product-Liquid U Urine PS Product-Solid B Blood
	and the second second second						P	Cont Lab O	nly:	- 1 1-						REMARKS
-1	MW-2	12.8-15.	1130	GW		4	1	X	X			1.27				
2	MW-3	12-8-15	1040	GW		3	3	X			=11		1			
3	MW-4	12-8-15	820	GW		3		X			-		-			
4	MW-5	12-1-15	1030	GW		3		X	1		-		-	-		
5	MW-6	12-7-15	1115	GW		3		X			-	-				
6	MW-7	12.8-15	1000	GW		3		X		1 +	-+		-			
7	MW-8	12-8-15	1126	GW				X	-	1	-+	-	- 1	-		
8	MW-9	10.9.e	ALAN	GW					-		-	-	-		1000 S 100	
9		12-0-12	4,00	011					-		_		-			
0						-			-		-					
Reo	Program / Clean-up Std	STATE	for Cents 8 (Reas	OAL	0010	018 50	tilleation								
s TRRP	DW NPDES LPST DryCln Ott	her: FL TX GA N	VC SC NJ PA	A OK	1 <u>2</u> 3	A CLI	AFCEE	QAPP	ADaPT	SEDD ERP	MS I	Match Incom	oelo nplete	Coplers	Temp G	Lab Use Only YES NO N
	Relinquished by		Affliatio	m j	D	ale	P Other:	Time	XLS O	her: Received by		Absent Un Athliatio	n	1 <u>15</u> 2	37.60	Samples intact upon arrival?
- 4	Sound Litre	ley	Basin		12.9	-15	110	50 (X	Stitt		ms	1	AME		Labeled with proper preservatives?
-		-			1.1.1	_		h	11.51	SOM	N	lonce	31	211015	12:30	Custody seals intact?
-				- 14	-	-	-		10		'			- property	12.30	Proper containers used?
Labo	unterian. Ushba ave and			1	1.00			-								Received on time to meet HTs?

FTS Service Centers: Atlanta 770-449-8800 Lakeland 863-646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099

C.O.C. Serial #

Execution of this document by cliant creates a legal and binding agreement between client and Xenco for analytical and testing services provided by Xenco to client under Xenco's standard terms and conditions unless previously agreed in writing. Terms of payment are Net 30 days, and all past due amounts shall accrue interest at 1.5% per month until paid in full. All laboratory analytical data and reports generated by Xenco remain the exclusive property of Xenco until invoices for such data are paid in full. Revision Date: Nor 12, 2009

Final 1.000



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 12/10/2015 12:30:00 PM Temperature Measuring device used : r8 Work Order #: 521067 Comments Sample Receipt Checklist 7.6 #1 *Temperature of cooler(s)? #2 *Shipping container in good condition? Yes #3 *Samples received on ice? Yes #4 *Custody Seals intact on shipping container/ cooler? N/A #5 Custody Seals intact on sample bottles? N/A #6 *Custody Seals Signed and dated? N/A #7 *Chain of Custody present? Yes #8 Sample instructions complete on Chain of Custody? Yes #9 Any missing/extra samples? No #10 Chain of Custody signed when relinquished/ received? Yes #11 Chain of Custody agrees with sample label(s)? Yes #12 Container label(s) legible and intact? Yes #13 Sample matrix/ properties agree with Chain of Custody? Yes #14 Samples in proper container/ bottle? Yes #15 Samples properly preserved? Yes #16 Sample container(s) intact? Yes #17 Sufficient sample amount for indicated test(s)? Yes #18 All samples received within hold time? Yes #19 Subcontract of sample(s)? No #20 VOC samples have zero headspace (less than 1/4 inch bubble)? Yes #21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for Yes samples for the analysis of HEM or HEM-SGT which are verified by the analysts. #22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH? N/A

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#: OC679789

Checklist completed by:

Date: 12/11/2015

Checklist reviewed by:

Carley Owens Carley Owens Muns Morah

Date: 12/14/2015

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

State of New Mexico **Energy Minerals and Natural Resources**

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

RECEIVED

Form C-141

APR 20 2000 HOBBSOCD District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

			OPERAT	OR	Initial Report	Final Report
Name of Company	Plains Pipeline, LP		Contact	Jason Henry		
Address	2530 Hwy 214 - Denver	City, Tx 79323	Telephone No	o. (575) 441-1099		
Facility Name	14 - inch Vac to Jal Lega	су	Facility Type	Pipeline		
					1 7 37	
Surface Owner Leg	acy Petroleum	Mineral Owner	•		Lease No.	

NETAROSY API # 30.025 · 11759.00.00 LOCATION OF RELEASE WELL										
	Unit Letter F	Section 25	Township 25S	Range 37E	Feet from the	North/South Line	Feet from the	East/West Line	County Lea	

Latitude N 32°6' 10.7" Longitude W 103° 7' 10.3"

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release 250 bbls	Volume Recovered 0 bbls							
Source of Release 14" Steel Pipeline	Date and Hour of Occurrence	Date and Hour of Discovery							
	04/09/2009	04/09/2009 10:00 a.m.							
Was Immediate Notice Given?	If YES, To Whom?								
🛛 Yes 🔲 No 🔲 Not Required	Larry Johnson								
By Whom? Jason Henry	Date and Hour 04/09/2009 @ 14	:20							
Was a Watercourse Reached?	If YES, Volume Impacting the Wate	ercourse.							
🗌 Yes 🛛 No									
If a Watercourse was Impacted, Describe Fully.*									
	WHIEKA	22							
Describe Cause of Problem and Remedial Action Taken *		· · · · · · · · · · · · · · · · · · ·							
During the purging of the 14-inch Sweet Vac to Jal Line, a release of cruc	le oil occurred due to external corrosio	n. Throughput for the subject line is 0							
bbls/day because the line is inactive and was being purged at the time of t	he release. The depth of the pipeline a	t the release point is approximately 2' bgs.							
The H2S concentration in the crude is less than 10 ppm and the gravity of	the crude is 38.								
Describe Area Affected and Cleanup Action Taken.* .									
The released crude resulted in a surface stain that measured approximately 300' x 300'. The impacted area will be remediated per applicable suidalines									
The released erede reserved in a surface scale that measured approximately 500° × 500°. The impacted area will be reliculated 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 th	e NMOCD marked as "Final Report" d	oes not relieve the operator of liability							
should their operations have failed to adequately investigate and remediat	e contamination that pose a threat to gr	ound water, surface water, human health							
or the environment. In addition, NMOCD acceptance of a C-141 report of federal state or local laws and/or resultions.	loes not relieve the operator of responsi	bility for compliance with any other							
rederal, state, or local laws and/or regulations.	OU CONSERV								
A	<u>OIL CONSERV</u>	ATION DIVISION							
Signature: han lemm									
Approved by District Supervisor of Many (O.M.)									
Printed Name: Jason Henry									
Title: Remediation Coordinator	Approval Date: 09 2109	Expiration Date: 06122107							
E-mail Address: ibenzy@naaln.com	Conditions of Annaously to								
C-man Audress. Jiemy@paaip.com	CLEANS I. SURMAN FINAL C-	Attached							
Date: 04/20/2009 Phone: (575) 441-1000	BY 06/22/09.								

* Attach Additional Sheets If Necessary

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