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Basin Environmental Service Technologies, LLC

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Effective Solutions

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 32º 06' 10.7" North, Longitude 103º 07' 10.3" West
NMOCD Reference # 1RP-2162

Prepared For:

PLAINS

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

Prepared By:

Basin Environmental Service Technologies, LLC
P. O. Box 301
Lovington, New Mexico 88260

April 2016

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 yd^3) 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-4 is located approximately one hundred feet (100') to the northwest (up-gradient) of 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-1.

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 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 (cross-gradient) 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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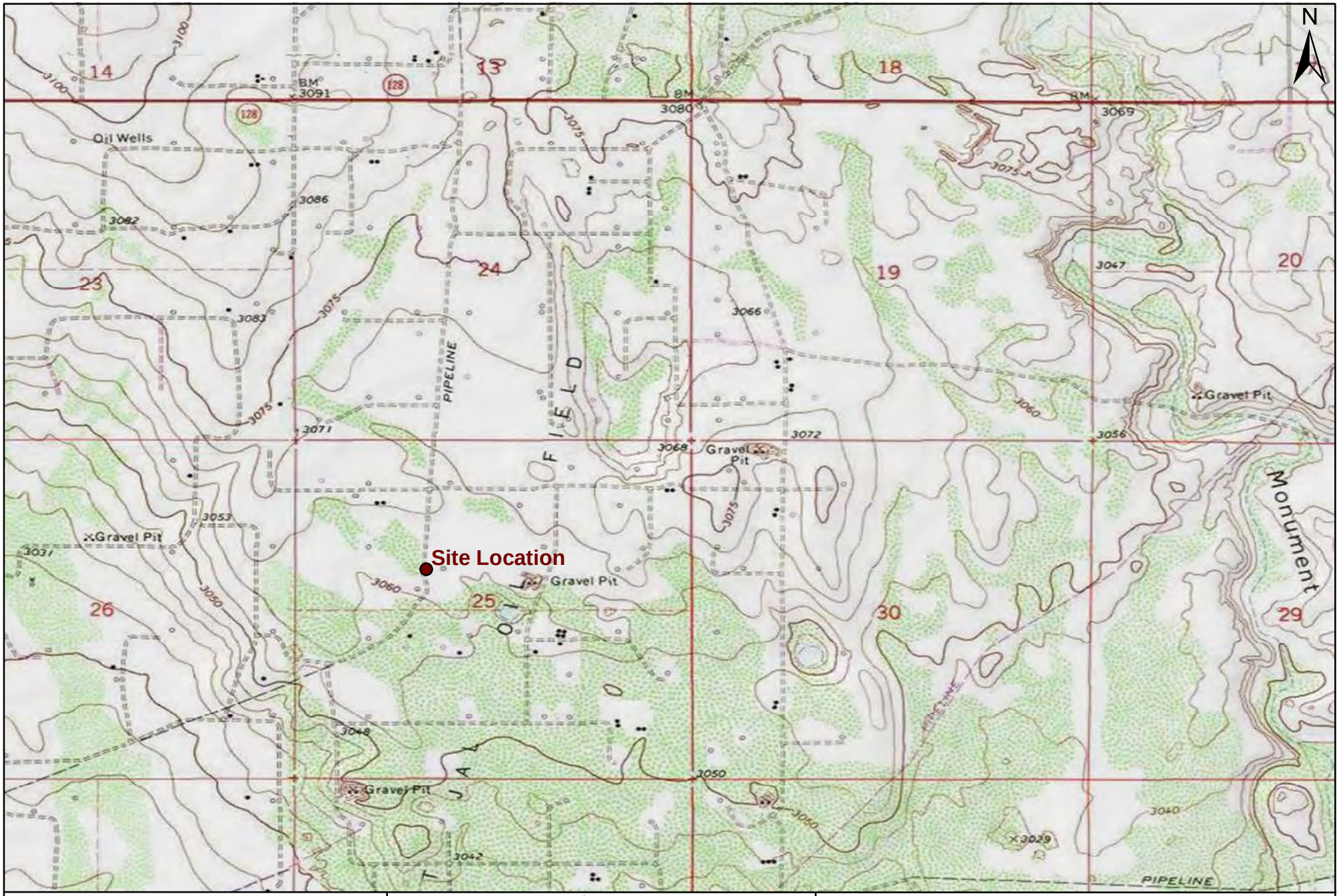
Figures



1,000500 0 1,000 2,000

Distance in Feet

Figure 1
Site Location Map
Plains All American Pipeline, LP
14 nc Vac to Jal Legacy
Lea County, New Mexico
Plains SRS #: 2009-092
NMOCD Ref. #: 1RP-2162

Basin Environmental Service Technologies, LLC
3100 Plains Hwy.
Lovington, NM 88260

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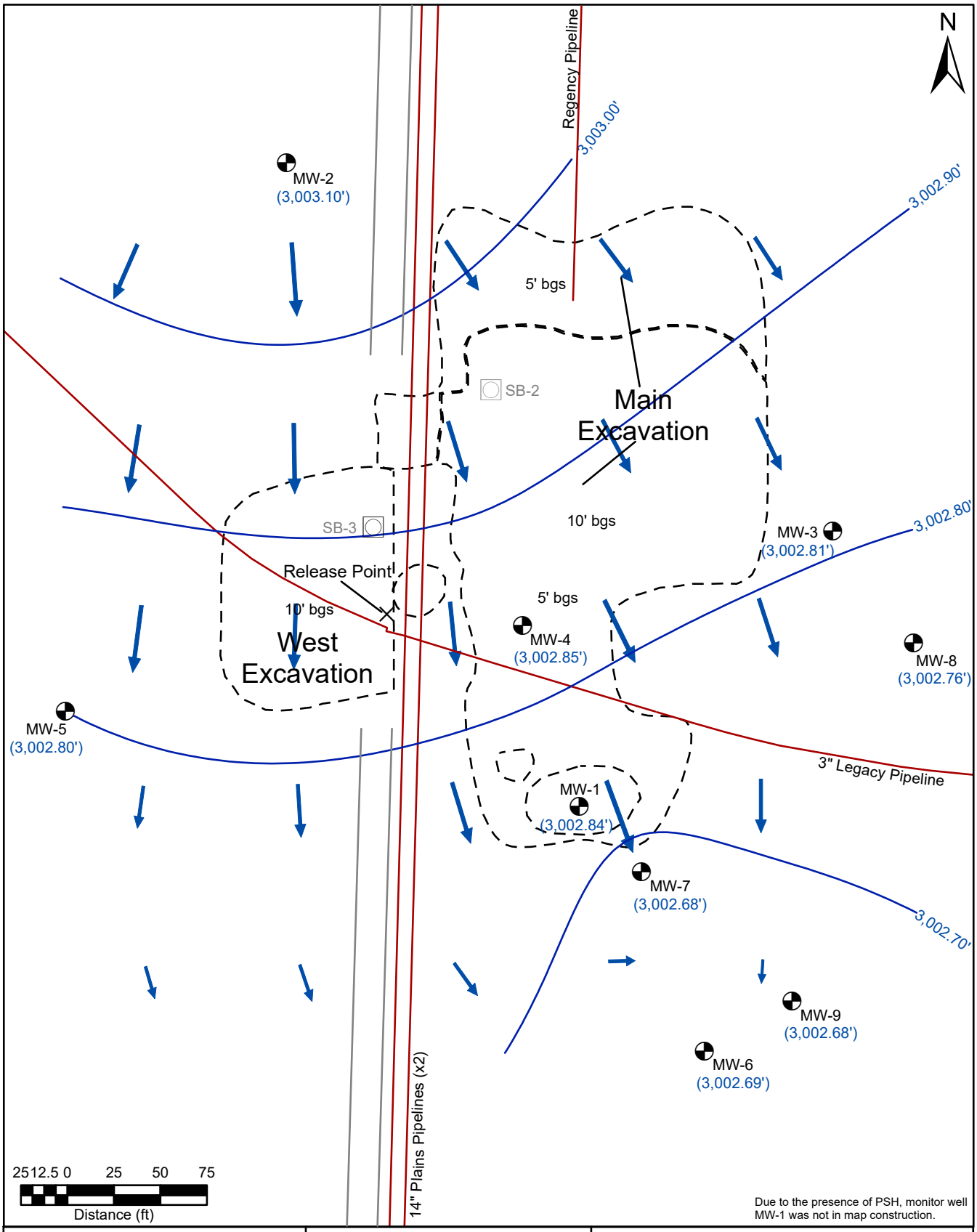


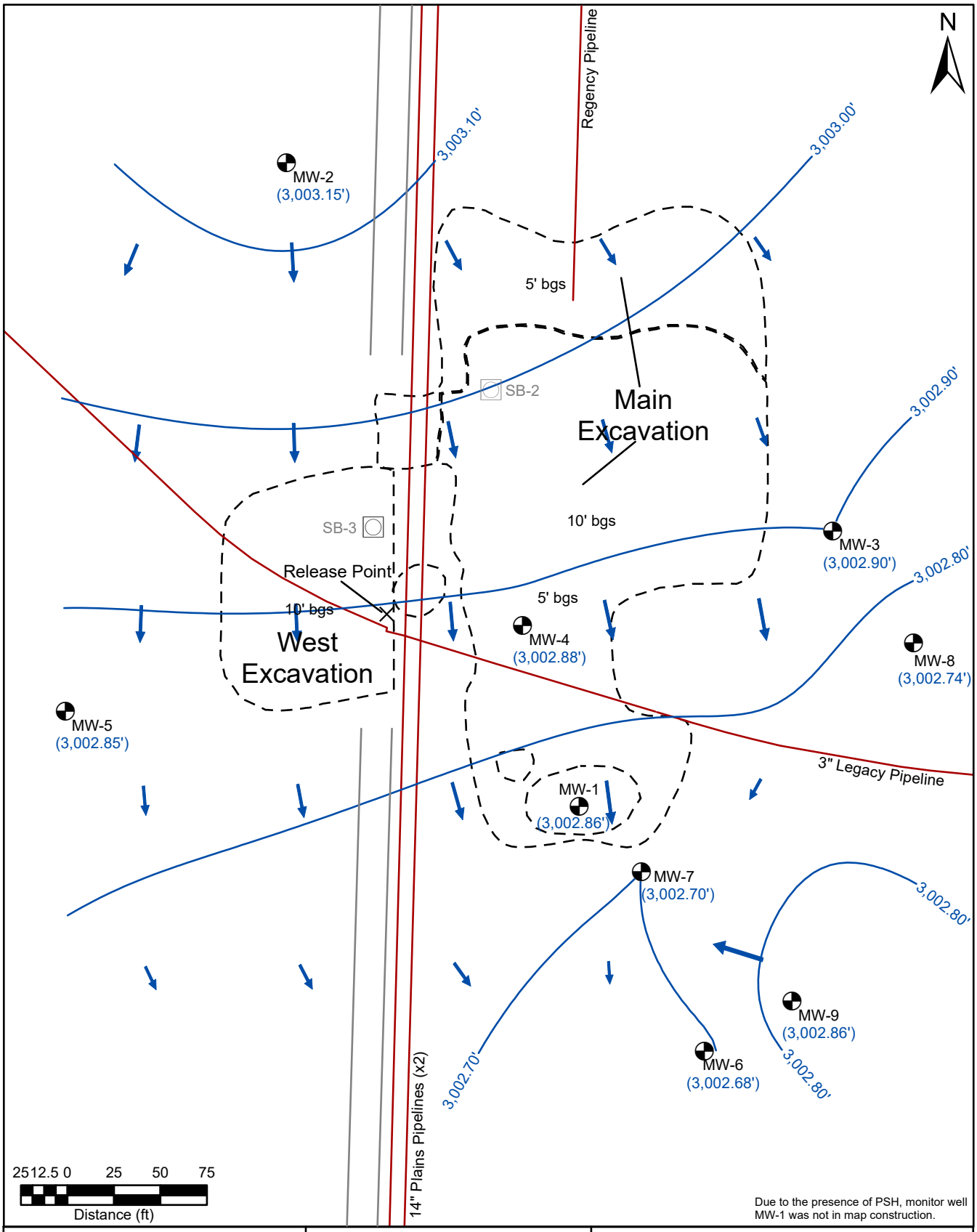
Legend

- Pipeline
- Excavation Extent
- Caliche Road
- Groundwater Elevation Contour
- Groundwater Gradient Direction/Magnitude
- Monitor Well
- Soil Boring

Figure 2A
Groundwater Gradient Map - 1Q2015
Plains All American Pipeline, LP
14-Inch Vac to Jal Legacy
Lea County, New Mexico
Plains SRS #: 2009-092
NMOCD Reference #: 1RP-2162

Basin Environmental Service Technologies
3100 Plains Hwy.
Lovington, NM 88260

Drawn By: BJA	Checked By: SDW
April 11, 2016	Scale: 1" = 75'



Legend

- Pipeline
- Excavation Extent
- Caliche Road
- Groundwater Elevation Contour
- Groundwater Gradient Direction/Magnitude
- Monitor Well
- Soil Boring

Figure 2B
Groundwater Gradient Map - 2Q2015
Plains All American Pipeline, LP
14-Inch Vac to Jal Legacy
Lea County, New Mexico
Plains SRS #: 2009-092
NMOCD Reference #: 1RP-2162

Basin Environmental Service Technologies
3100 Plains Hwy.
Lovington, NM 88260

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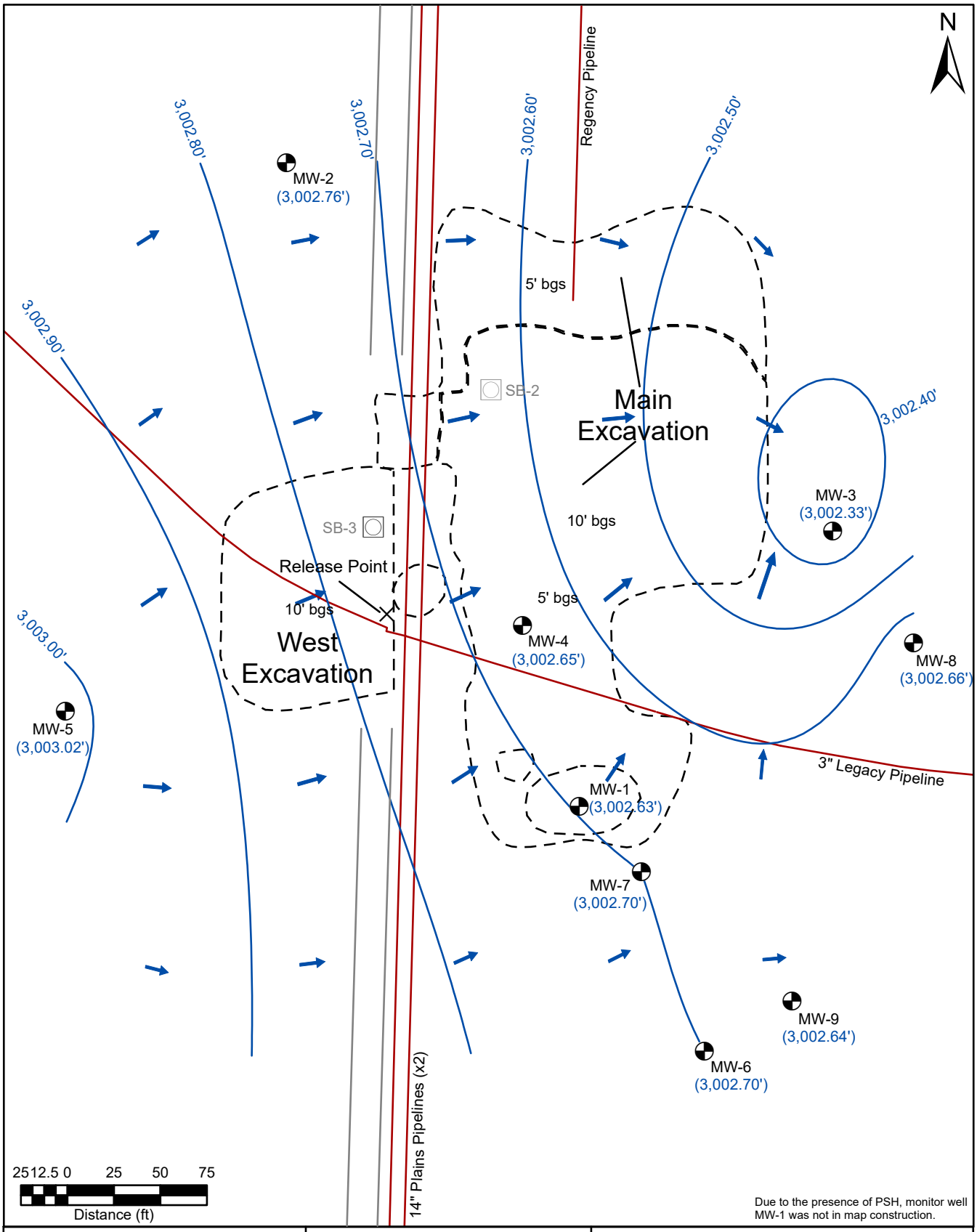

Legend

- Pipeline
- Excavation Extent
- Caliche Road
- Groundwater Elevation Contour
- Groundwater Gradient Direction/Magnitude
- Monitor Well
- Soil Boring

Figure 2C
Groundwater Gradient Map - 3Q2015
Plains All American Pipeline, LP
14-Inch Vac to Jal Legacy
Lea County, New Mexico
Plains SRS #: 2009-092
NMOCD Reference #: 1RP-2162

Basin Environmental Service Technologies
3100 Plains Hwy.
Lovington, NM 88260

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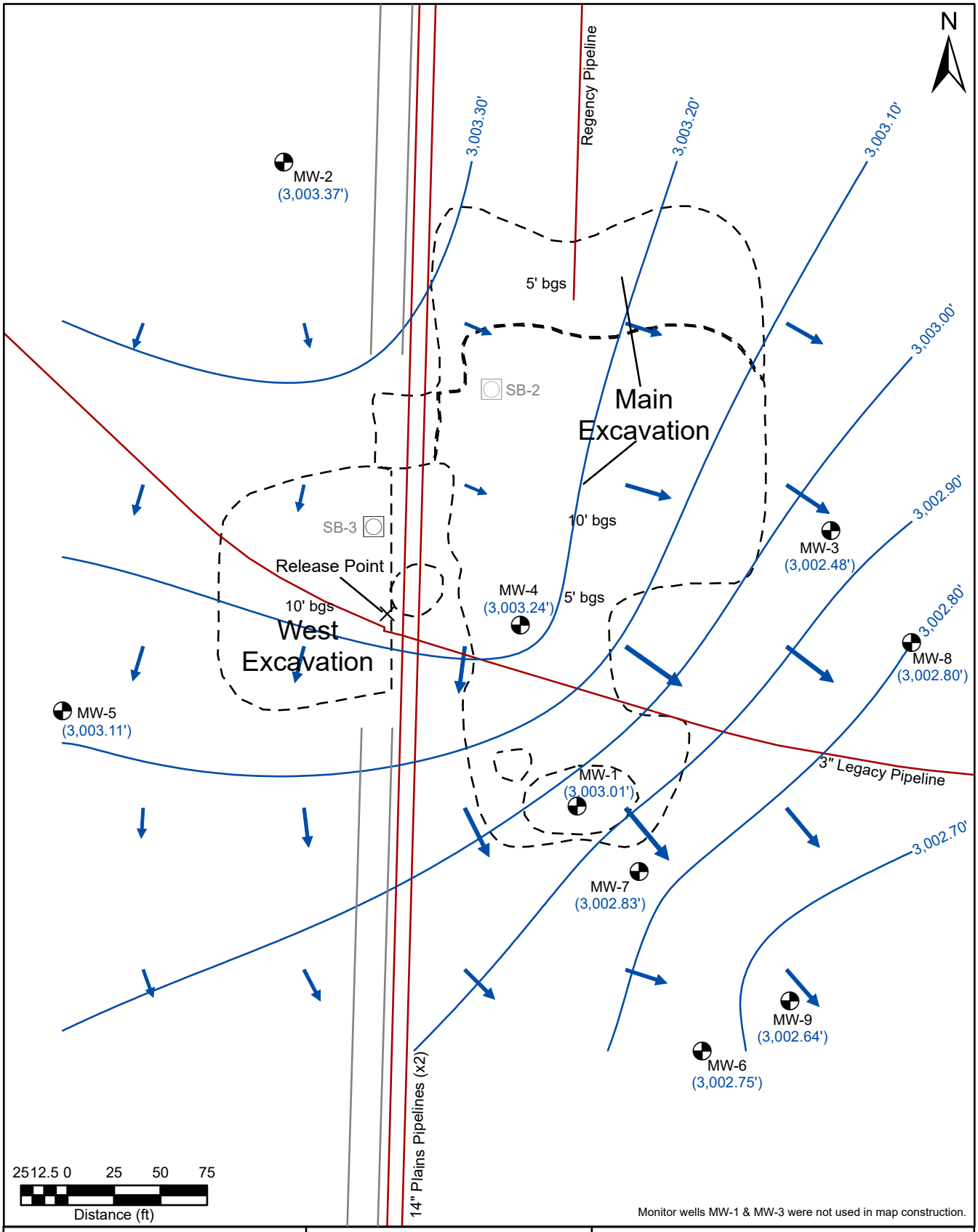

Legend

- Pipeline
- Excavation Extent
- Caliche Road
- Groundwater Elevation Contour
- Groundwater Gradient Direction/Magnitude
- Monitor Well
- Soil Boring

Figure 2D
Groundwater Gradient Map - 4Q2015
Plains All American Pipeline, LP
14-Inch Vac to Jal Legacy
Lea County, New Mexico
Plains SRS #: 2009-092
NMOCD Reference #: 1RP-2162

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Lovington, NM 88260

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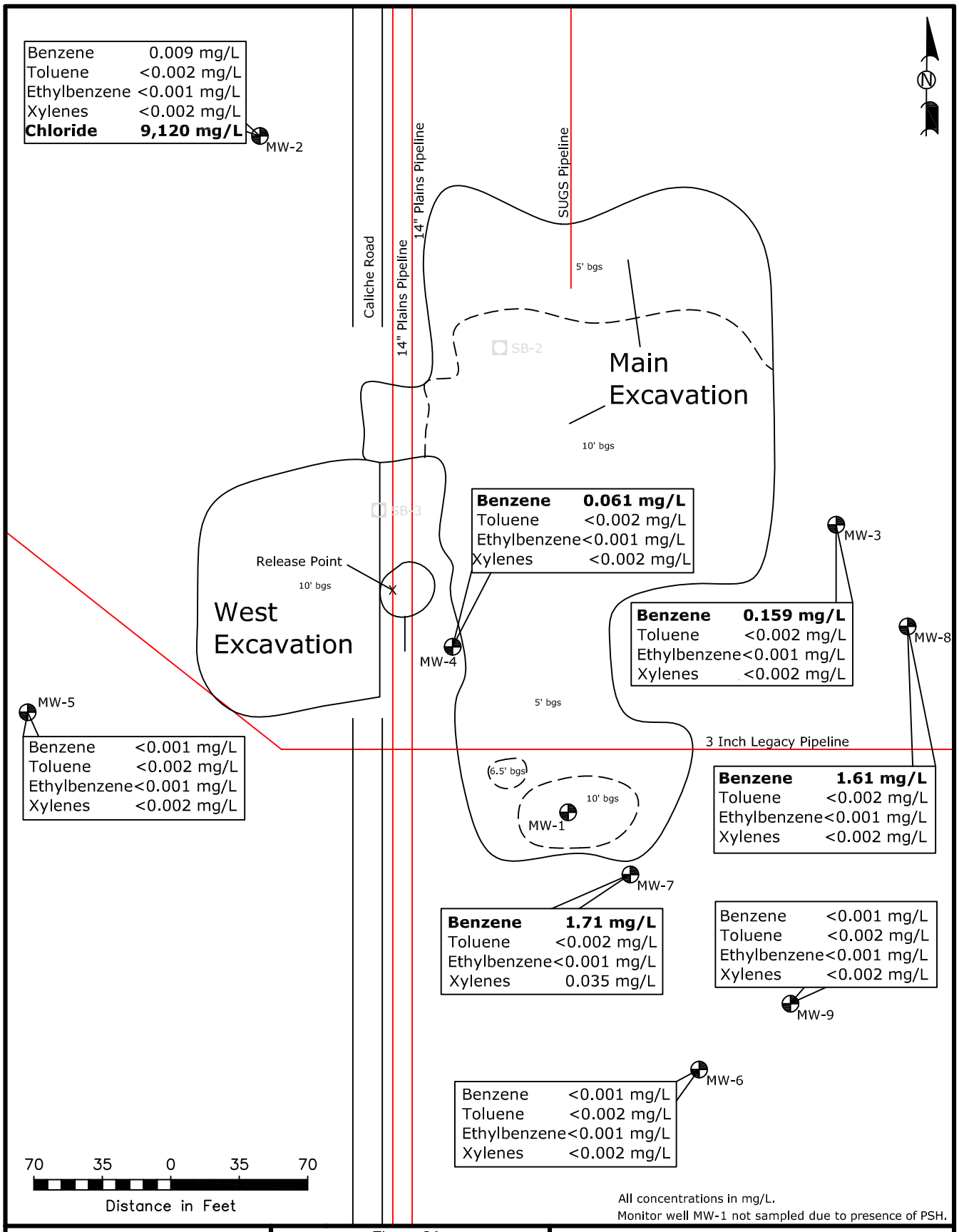

LEGEND:
- Pipeline
- Excavation Extent
- Monitor Well Location
- Soil Boring Location

Figure 3A
Groundwater Concentration Map
1Q2015
Plains All American Pipeline, LP
14-Inch Vac to Jal Legacy
Lea County, NM
SRS # 2009-092
NMOCD Ref. # 1RP-2162

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Basin Environmental Service Technologies, LLC
3100 Plains Hwy.
Lovington, NM 88260

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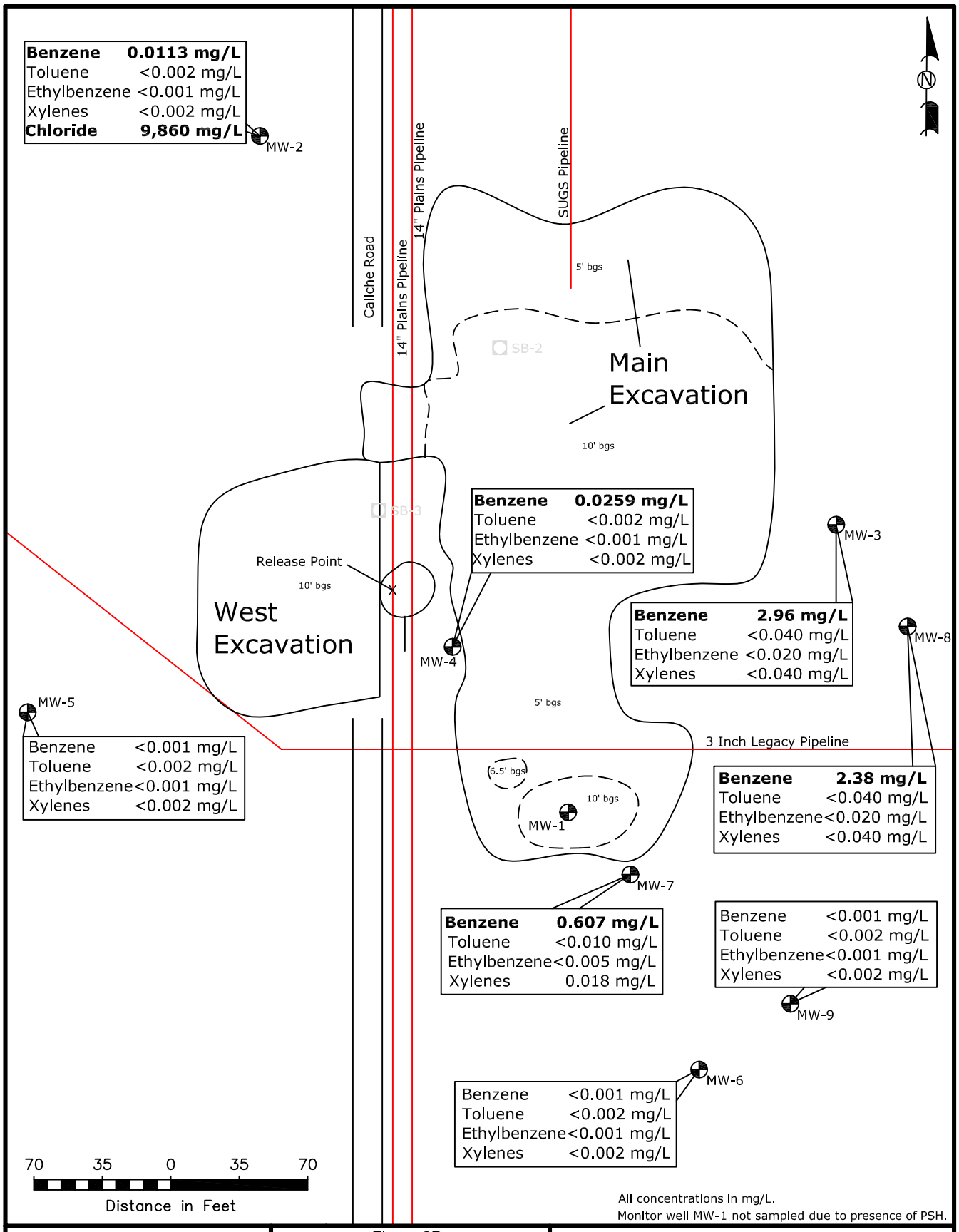
April 22, 2015		



LEGEND:
- Pipeline
- Excavation Extent
- Monitor Well Location
- Soil Boring Location

Figure 3B
Groundwater Concentration Map
2Q2015
Plains All American Pipeline, LP
14-Inch Vac to Jal Legacy
Lea County, NM
SRS # 2009-092
NMOCD Ref. # 1RP-2162

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Basin Environmental Service Technologies, LLC
3100 Plains Hwy.
Lovington, NM 88260

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May 20, 2015		

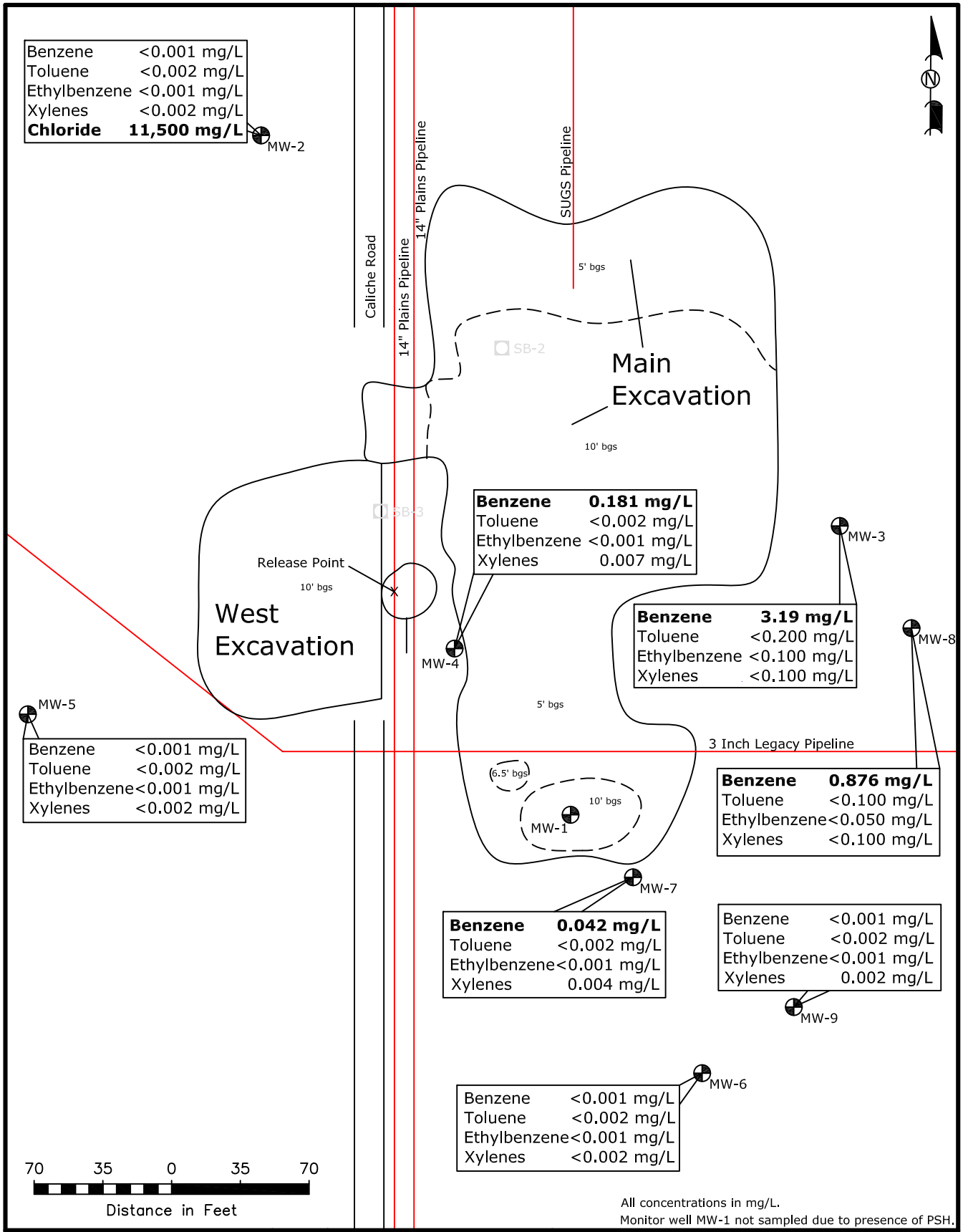

Figure 3C
Groundwater Concentration Map
3Q2015
Plains All American Pipeline, LP
14-Inch Vac to Jal Legacy
Lea County, NM
SRS # 2009-092
NMOCD Ref. # 1RP-2162

Basin Environmental Service Technologies, LLC
3100 Plains Hwy.
Lovington, NM 88260

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April 15, 2016		

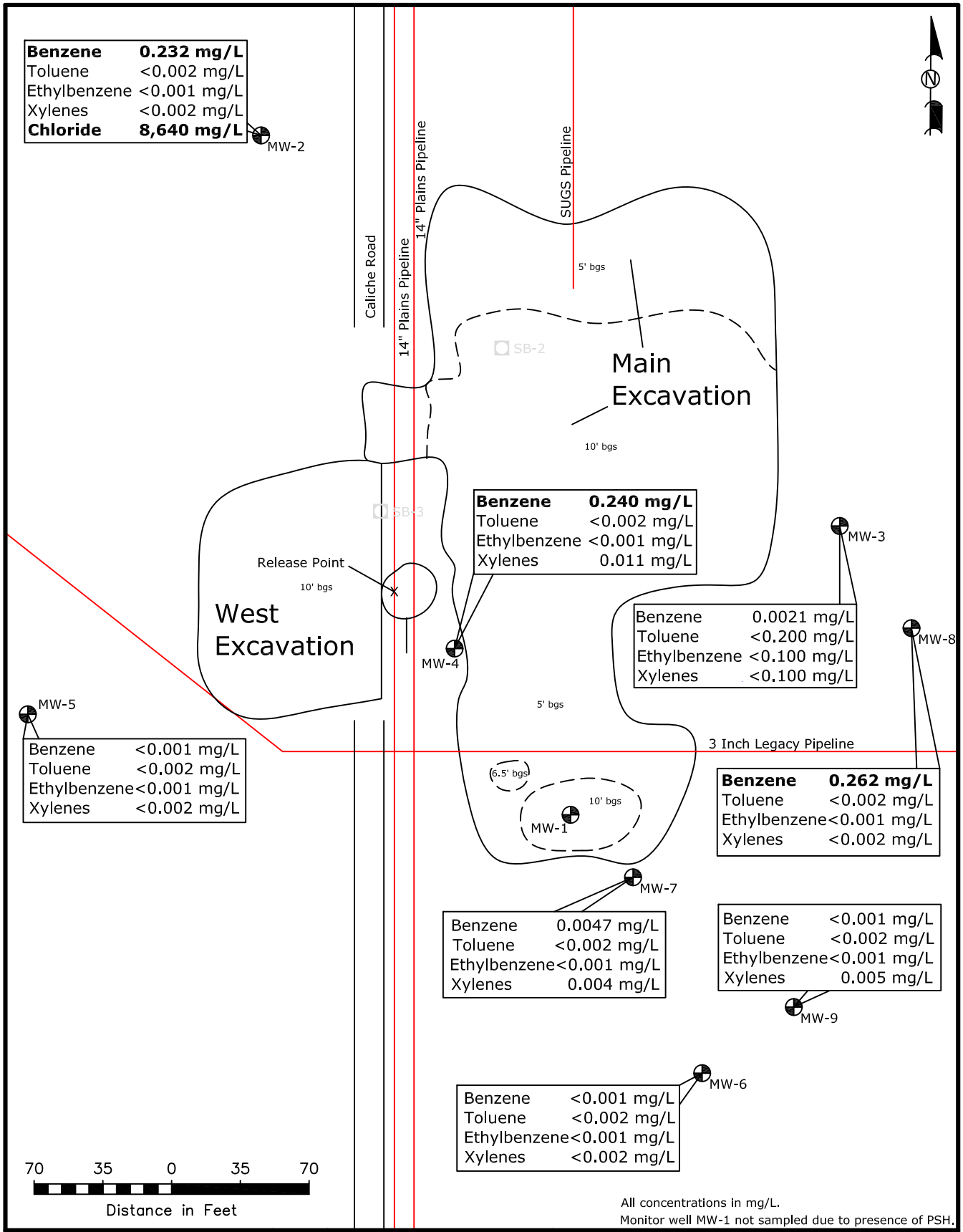

Figure 3D
Groundwater Concentration Map
4Q2015
Plains All American Pipeline, LP
14-Inch Vac to Jal Legacy
Lea County, NM
SRS # 2009-092
NMOCD Ref. # 1RP-2162

Basin Environmental Service Technologies, LLC
3100 Plains Hwy.
Lovington, NM 88260

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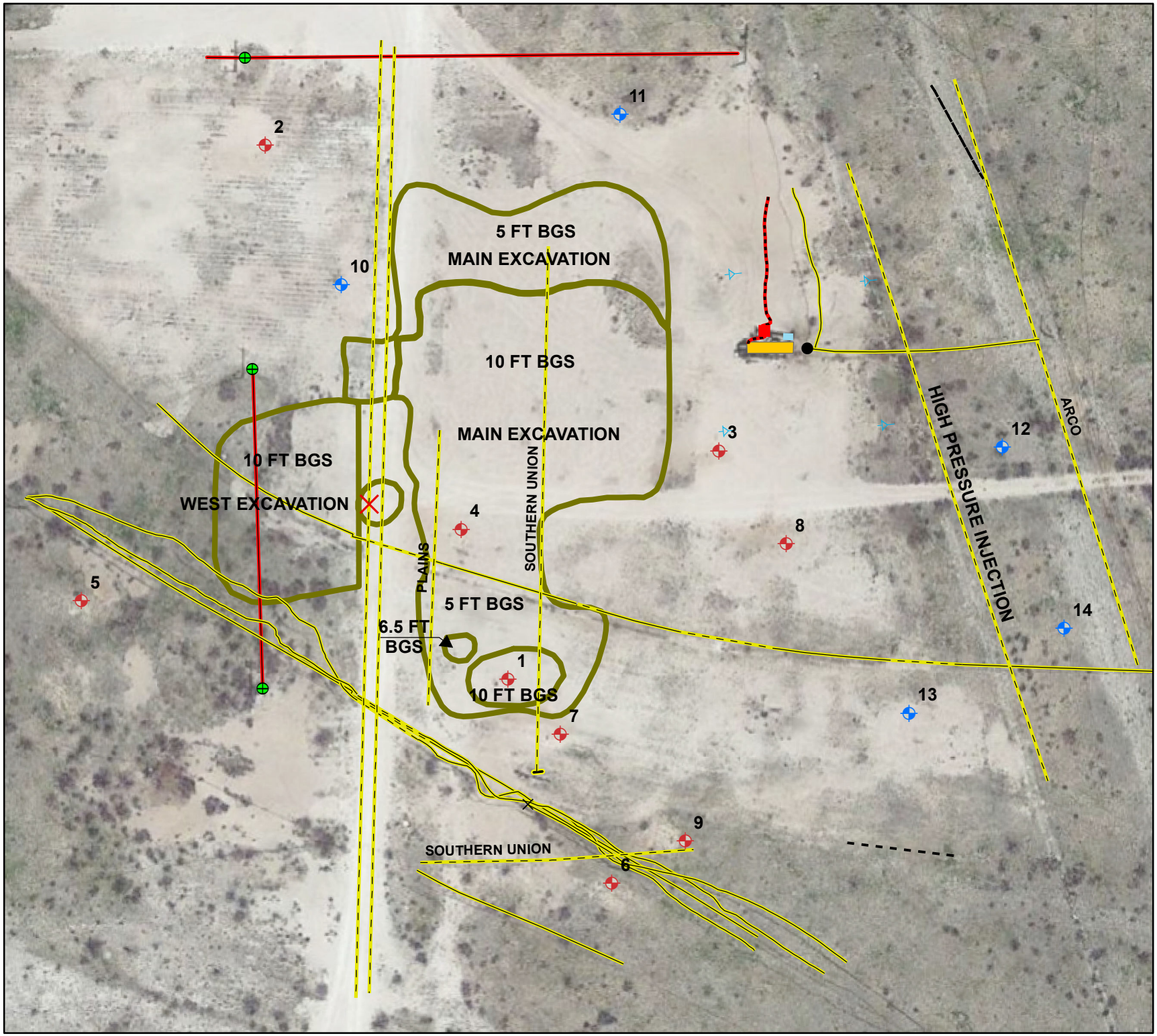

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Figure 4
PROPOSED MONITOR WELL LOCATIONS
Plains Marketing, LP 14"
Vac to Jal Legacy UL "F"
Sec. 25
T-25-S R-37 E
Lea County, NM
Plains SRS #: 2009-092

Legend

- DEADMAN
- ELECTRIC POLE
- ELECTRICAL BOX
- PIPE END
- RELEASE POINT
- WELLHEAD
- MONITOR WELL
- PROPOSED MONITOR WELL
- BURIED PIPELINE
- OVERHEAD ELECTRIC LINE
- RISER
- SURFACE ELECTRIC
- SURFACE PIPELINE
- VISIBLE ROW
- CHEMICAL TANK
- EXCAVATION
- PUMPJACK

0 50 100 Feet

N W E S

GPS date: 10/13/15 TG
Revision date: 1/21/16
Drafted by: T. Grieco
Revised by: B. Arguijo

Tables

TABLE 1
2015 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 2
2015 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 LOCATION	SAMPLE DATE	METHODS: EPA SW 846-8021B, 5030							CHLORIDE (mg/L)
		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)	
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 2
2015 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 LOCATION	SAMPLE DATE	METHODS: EPA SW 846-8021B, 5030							CHLORIDE (mg/L)
		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)	
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**	**TOTAL 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.

Respectfully,

Kelsey Brooks
Project Manager

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

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 503260

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac To Jal Legacy

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

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

Analysis Requested													
	Lab Id:	503260-001		503260-002		503260-003		503260-004		503260-005		503260-006	
	Field Id:	MW-2		MW-3		MW-4		MW-5		MW-6		MW-7	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Feb-25-15 12:25		Feb-25-15 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 13:00		Mar-04-15 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 22:34		Mar-04-15 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

Certificate of Analysis Summary 503260

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac To Jal Legacy

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

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

Analysis Requested							
	Lab Id:	503260-007		503260-008			
	Field Id:	MW-8		MW-9			
	Depth:						
	Matrix:	WATER		WATER			
	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		

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

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** 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

Form 2 - Surrogate Recoveries

Project Name: 14" Vac To Jal Legacy

Work Orders : 503260,

Project ID: SRS# 2009-092

Lab Batch #: 963138 **Sample:** 503260-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/04/15 22:34

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

Lab Batch #: 963138 **Sample:** 503260-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/04/15 22:50

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0326	0.0300	109	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 963138 **Sample:** 503260-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/04/15 23:07

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 963138 **Sample:** 503260-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/04/15 23:24

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0330	0.0300	110	80-120	

Lab Batch #: 963138 **Sample:** 503260-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/04/15 23:40

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0318	0.0300	106	80-120	
4-Bromofluorobenzene	0.0341	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 Orders : 503260,

Project ID: SRS# 2009-092

Lab Batch #: 963138 **Sample:** 503260-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/05/15 12:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0339	0.0300	113	80-120	

Lab Batch #: 963138 **Sample:** 503260-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/05/15 12:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0337	0.0300	112	80-120	
4-Bromofluorobenzene	0.0335	0.0300	112	80-120	

Lab Batch #: 963138 **Sample:** 503260-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/05/15 12:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 963138 **Sample:** 689349-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/04/15 17:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

Lab Batch #: 963138 **Sample:** 689349-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/04/15 17:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0358	0.0300	119	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: 14" Vac To Jal Legacy

Work Orders : 503260,

Project ID: SRS# 2009-092

Lab Batch #: 963138 **Sample:** 689349-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/04/15 17:52

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/04/15 18:09

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 963138 **Sample:** 503254-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 03/04/15 18:25

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY 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

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

BS / BSD Recoveries

Project Name: 14" Vac To Jal Legacy

Work Order #: 503260 **Project ID:** SRS# 2009-092

Analyst: ARM **Date Prepared:** 03/04/2015 **Date Analyzed:** 03/04/2015

Lab Batch ID: 963138 **Sample:** 689349-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<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

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: 14" Vac To Jal Legacy

Work Order # : 503260 **Project ID:** SRS# 2009-092

Lab Batch ID: 963138 **QC- Sample ID:** 503254-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 03/04/2015 **Date Prepared:** 03/04/2015 **Analyst:** ARM

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	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.

CHAIN OF CUSTODY RECORD

XENCO Laboratories — Environmental Asbestos Radiochemistry

Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 12600 West I-20 East Odessa, TX 79765 (432)563-1800
Hobbs: 4008 N Grimes Hobbs, NM 88240 (575)392-7550

Page 1 of 1

LAB W.O#: 503260

Field billable Hrs :

Company:	Basin Environmental Service Technologies, LLC	Phone:	(575)396-2378
Address:	3100 Plains Hwy.	Fax:	(575)396-1429
City:	Lovington	State: NM	Zip: 88260
PM/Attn:	Ben Arguijo	Email:	cjbryant@paalp.com, bjarguijo@basinenv.com
Project ID:	14" Vac to Jal Legacy SRS #2009-092	PO#:	PAA-C. Bryant
Invoice To:	Camille Bryant Plains All American	Quote #:	

TAT Work Days = D Need results by:_____ Time:_____

Std (5-7D) 5Hrs 1D 2D 3D 4D **5D 7D** 10D 14D Other_____

Sampler Name: Daley Saxton

Circle One Event: Daily Weekly Monthly Quarterly Semi-Annual Annual N/A

ANALYSES REQUESTED

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Cont Type * VC	Pres Type** E, I	Example Volatiles by 8260	BTEX	Chloride								Hold Sample (CALL)	Run PAH on Highest TPH Only if
								# Cont	Lab Only:		VP	PC									
1	MW-2	2/25/15	1225	GW			3				X	X									
2	MW-3	2/25/15	1130	GW			3				X											
3	MW-4	2/25/15	1420	GW			3				X											
4	MW-5	2/25/15	1220	GW			3				X											
5	MW-6	2/25/15	1340	GW			3				X											
6	MW-7	2/25/15	1330	GW			3				X											
7	MW-8	2/25/15	1115	GW			3				X											
8	MW-9	2/25/15	1425	GW			3				X											
9																						
10																						

* Container Type Codes

VA	Vial Amber	ES	Encore Sampler
VC	Vial Clear	TS	TerraCore Sampler
VP	Vial Pre-preserved	AC	Air Canister
GA	Glass Amber	TB	Tedlar Bag
GC	Glass Clear	ZB	Zip Lock Bag
PA	Plastic Amber	PC	Plastic Clear
PC	Plastic Clear		

Other _____

Size(s): 2oz, 4oz, 8oz, 16oz, 32oz , 1Gal 40ml, 125 ml, 250 ml, 500 ml, 1L, Other _____

** Preservative Type Codes

A. None E. HCL I. Ice
B. HNO_3 F. MeOH J. MCAA C.
H_2SO_4 G. $Na_2S_2O_3$ K. ZnAc&NaOH
D. NaOH H. $NaHSO_4$ L Asbc Acid&NaOH
O. _____

^ Matrix Type Codes

GW	Ground Water	S	Soil/Sediment/Solid
WW	Waste Water	W	Wipe
DW	Drinking Water	A	Air
SW	Surface Water	O	Oil
OW	Ocean/Sea Water	T	Tissue
PL	Product-Liquid	U	Urine
PS	Product-Solid	B	Blood
SL	Sludge		

Other

REMARKS

Reg. Program / Clean-up Std	STATE for Certs & Regs	QA/QC Level & Certification	EDDs	COC & Labels	Coolers Temp °C
CTLs TRRP DW NPDES LPST DryCln Other:	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 ERPIMS XLS Other:	Match Incomplete Absent Unclear	1 3.2 2 0 3

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	D Sanchez	Basin Env	2/25/15	19:00				
2		Basin Env.	3/2/15	1400			3-2-15	1400
3		Basin	3-2-15	1525			3/2/15	1525
4							3/2/15	1750

Lab Use Only	YES	NO	N/A
Non-Conformances found?			
Samples intact upon arrival?			
Received on Wet Ice?			
Labeled with proper preservatives?			
Received within holding time?			
Custody seals intact?			
VOCs rec'd w/o headspace?			
Proper containers used?			
pH verified-acceptable, excl VOCs?			
Received on time to meet HTs?			

C.O.C. Serial #

Revision Date: Nov 12, 2009

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

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

Work Order #: 503260

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

Temperature Measuring device used :

Sample Receipt 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 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?	**No**

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

Analyst:

PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 03/03/2015

Checklist reviewed by: 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

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

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.

Respectfully,

Kelsey Brooks
Project Manager

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

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 503937

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac To Jal Legacy

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

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

Analysis Requested							
	Lab Id:	503937-001					
	Field Id:	MW-2					
	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					

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

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** 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

BS / BSD Recoveries

Project Name: 14" Vac To Jal Legacy

Work Order #: 503937 **Project ID:** SRS# 2009-092

Analyst: JUM **Date Prepared:** 03/19/2015 **Date Analyzed:** 03/19/2015

Lab Batch ID: 964067 **Sample:** 689949-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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	24.2	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

Form 3 - MS Recoveries

Project Name: 14" Vac To Jal Legacy

Work Order #: 503937

Lab Batch #: 964067 **Project ID:** SRS# 2009-092

Date Analyzed: 03/19/2015 **Date Prepared:** 03/19/2015 **Analyst:** JUM

QC- Sample ID: 503937-001 S **Batch #:** 1 **Matrix:** Water

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	9120	5000	14200	102	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

CHAIN OF CUSTODY RECORD

XENCO Laboratories — Environmental Asbestos Radiochemistry

Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 12600 West I-20 East Odessa, TX 79765 (432)563-1800
Hobbs: 4008 N Grimes Hobbs, NM 88240 (575)392-7550

LAB W.O#: 503937

Field billable Hrs :

Company:	Basin Environmental Service Technologies, LLC	Phone:	(575)396-2378
Address:	3100 Plains Hwy.	Fax:	(575)396-1429
City:	Lovington	State: NM	Zip: 88260
PM/Attn:	Ben Arguijo	Email:	cjbryant@paalp.com, bjarguijo@basinenv.com
Project ID:	14" Vac to Jal Legacy SRS #2009-092	PO#:	PAA-C. Bryant
Invoice To:	Camille Bryant Plains All American	Quote #:	
Sampler Name:	Daley Saxton	Circle One Event:	Daily Weekly Monthly Quarterly Semi-Annual Annual N/A

TAT Work Days = D Need results by:_____ Time:_____

Std (5-7D) 5Hrs 1D 2D 3D 4D **5D 7D** 10D 14D Other_____

ANALYSES REQUESTED

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Cont Type * VC	Pres Type** E, I	Example Volatiles by 8260	Chloride									Hold Sample (CALL___) Run PAH on Highest TPH Only if
								# Cont			PC									
											I									
1	MW-2	3/3/15		GW			1				X									
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

* Container Type Codes

VA Vial Amber, VC Vial Clear, VP Vial Pre-preserved, GA Glass Amber, GC Glass Clear, PA Plastic Amber, PC Plastic Clear, ES Encore Sampler, TS TerraCore Sampler, AC Air Canister, TB Tedlar Bag, ZB Zip Lock Bag, PC Plastic Clear
Other_____

Size(s): 2oz, 4oz, 8oz, 16oz, 32oz, 1Gal 40ml, 125 ml, 250 ml, 500 ml, 1L, Other_____

** Preservative Type Codes

A. None, E. HCL, I. Ice, B. HNO_3, F. MeOH, J. MCAA, C. H_2SO_4, G. $Na_2S_2O_3$, K. ZnAc&NaOH, D. NaOH, H. $NaHSO_4$, L. Asbc Acid&NaOH, O._____

^ Matrix Type Codes

GW Ground Water, WW Waste Water, DW Drinking Water, SW Surface Water, OW Ocean/Sea Water, PL Product-Liquid, PS Product-Solid, SL Sludge, Other, S Soil/Sediment/Solid, W Wipe, A Air, O Oil, T Tissue, U Urine, B Blood

REMARKS

Reg. Program / Clean-up Std	STATE for Certs & Regs	QA/QC Level & Certification	EDDs	COC & Labels	Coolers Temp °C
CTLs TRRP DW NPDES LPST DryCln Other:	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 ERPIMS XLS Other:	Match Incomplete Absent Unclear	1 2 3

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1		BEST	3-12-15	13:00				
2		BASIN ENV.	3/12/15	1325		Basin Env.	3/12/15	1325
3		BASIN	3/12/15	14:15		Basin	3/12/15	1325
4						Xenco	3/13/15	11:35

Lab Use Only	YES	NO	N/A
Non-Conformances found?			
Samples intact upon arrival?			
Received on Wet Ice?			
Labeled with proper preservatives?			
Received within holding time?			
Custody seals intact?			
VOCs rec'd w/o headspace?			
Proper containers used?			
pH verified-acceptable, excl VOCs?			
Received on time to meet HTs?			

C.O.C. Serial #

B&A Laboratories: Hobbs 575-392-7550 Dallas 214-902-0300 Houston 281-242-4200 Odessa 432-563-1800 San Antonio 210-509-3334 Phoenix 602-437-0330
FTS Service Centers: Atlanta 770-449-8800 Lakeland 863-646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099

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: 03/13/2015 11:35:00 AM

Work Order #: 503937

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

Temperature Measuring device used :

Sample Receipt Checklist	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.	**No**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**No**

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

Analyst:

PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 03/13/2015

Checklist reviewed by: 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.

Respectfully,

Kelsey Brooks
Project Manager

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

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Hits Summary 507646

PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id : **MW-2** Matrix : Water % Moisture :
Lab Sample Id : 507646-001 Date Collected : 05.08.15 15.20
Date Received : 05.12.15 13.20

Analytical Method : 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	71-43-2	0.0113	mg/L	05.14.15 20.04		1
Total BTEX		0.0113	mg/L	05.14.15 20.04		1

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 968362 Date Prep: 05.17.15 20.27

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** Matrix : Water % Moisture :
Lab Sample Id : 507646-002 Date Collected : 05.08.15 15.10
Date Received : 05.12.15 13.20

Analytical Method : 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	71-43-2	2.96	mg/L	05.15.15 10.29		20
Total BTEX		2.96	mg/L	05.15.15 10.29		20

Sample Id : **MW-4** Matrix : Water % Moisture :
Lab Sample Id : 507646-003 Date Collected : 05.08.15 14.50
Date Received : 05.12.15 13.20

Analytical Method : 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	71-43-2	0.0259	mg/L	05.15.15 09.41		1
Total BTEX		0.0259	mg/L	05.15.15 09.41		1

Hits Summary 507646

PLAINS ALL AMERICAN EH&S, Midland, TX

14" Vac to Jal Legacy

Sample Id : **MW-7**
Lab Sample Id : 507646-006

Matrix : Water
Date Collected : 05.11.15 12.15
Date Received : 05.12.15 13.20

% Moisture :

Analytical Method : BTEX by EPA 8021
Seq Number 968228

Prep Method: SW5030B
Date Prep: 05.14.15 13.00

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 : **MW-8**
Lab Sample Id : 507646-007

Matrix : Water
Date Collected : 05.11.15 09.55
Date Received : 05.12.15 13.20

% Moisture :

Analytical Method : BTEX by EPA 8021
Seq Number 968228

Prep Method: SW5030B
Date Prep: 05.14.15 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	2.38	mg/L	05.15.15 11.00		20
Total BTEX		2.38	mg/L	05.15.15 11.00		20

Certificate of Analysis Summary 507646

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy

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

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

Analysis Requested													
	Lab Id:	507646-001		507646-002		507646-003		507646-004		507646-005		507646-006	
	Field Id:	MW-2		MW-3		MW-4		MW-5		MW-6		MW-7	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	May-08-15 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-14-15 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-14-15 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-17-15 20:27											
	Analyzed:	May-17-15 20:27											
	Units/RL:	mg/L	RL										
Chloride		9860	200										

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 507646

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy

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

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

Analysis Requested							
	Lab Id:	507646-007		507646-008			
	Field Id:	MW-8		MW-9			
	Depth:						
	Matrix:	WATER		WATER			
	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		

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

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** 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

Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 507646, **Project ID:** SRS#2009-092

Lab Batch #: 968228 **Sample:** 507646-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/14/15 19:48

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 968228 **Sample:** 507646-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/14/15 20:04

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 968228 **Sample:** 507646-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/14/15 21:11

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 968228 **Sample:** 507646-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/15/15 09:41

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 968228 **Sample:** 507646-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/15/15 09:58

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

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

Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 507646, **Project ID:** SRS#2009-092

Lab Batch #: 968228 **Sample:** 507646-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/15/15 10:29

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

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 968228 **Sample:** 507646-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/15/15 11:00

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0334	0.0300	111	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 968228 **Sample:** 692604-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/14/15 14:51

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 968228 **Sample:** 692604-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/14/15 15:07

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

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 507646,

Project ID: SRS#2009-092

Lab Batch #: 968228 **Sample:** 692604-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/14/15 15:24

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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 **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/14/15 15:40

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY 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	0.0301	0.0300	100	80-120	

Lab Batch #: 968228 **Sample:** 507644-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/14/15 15:57

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY 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

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

BS / BSD Recoveries

Project Name: 14" Vac to Jal Legacy

Work Order #: 507646 **Project ID:** SRS#2009-092

Analyst: ARM **Date Prepared:** 05/14/2015 **Date Analyzed:** 05/14/2015

Lab Batch ID: 968228 **Sample:** 692604-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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	0.0998	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 **Date Prepared:** 05/17/2015 **Date Analyzed:** 05/17/2015

Lab Batch ID: 968362 **Sample:** 692702-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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

Form 3 - MS Recoveries

Project Name: 14" Vac to Jal Legacy

Work Order #: 507646

Lab Batch #: 968362 **Project ID:** SRS#2009-092

Date Analyzed: 05/17/2015 **Date Prepared:** 05/17/2015 **Analyst:** JUM

QC- Sample ID: 507579-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

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

Form 3 - MS / MSD Recoveries

Project Name: 14" Vac to Jal Legacy

Work Order # : 507646 **Project ID:** SRS#2009-092

Lab Batch ID: 968228 **QC- Sample ID:** 507644-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 05/14/2015 **Date Prepared:** 05/14/2015 **Analyst:** ARM

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	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

Work Order #: 507646

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

Temperature Measuring device used :

Sample Receipt Checklist	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 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 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#:

Checklist completed by: Kelsey Brooks Date: 05/12/2015

Checklist reviewed by: Kelsey Brooks Date: 05/13/2015

XENCO Laboratories

Environmental Asbestos Radiochemistry

CHAIN OF CUSTODY RECORD

Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 12600 West I-20 East Odessa, TX 79765 (432)563-1800
Hobbs: 4008 N Grimes Hobbs, NM 88240 (575)392-7550

Page 1 of 1

LAB W.O #: 507646
Field billable Hrs :

Company: Basin Environmental Service Technologies, LLC	Phone: (575)396-2378
Address: 3100 Plains Hwy.	Fax: (575)396-1429
City: Lovington · State: NM	Zip: 88260
PM/Attn: Ben Arguijo	Email: cjbryant@paalp.com, bjarguijo@basinenv.com
Project ID: 14" Vac to Jal Legacy SRS #2009-092	PO#: PAA-C. Bryant
Invoice To: Camille Bryant Plains All American	Quote #:

Sampler Name: Bill Wooley

Circle One Event: Daily Weekly Monthly Quartely Semi-Annual Annual N/A

TAT Work Days = D Need results by:________ Time:________
Std (5-7D) 5Hrs 1D 2D 3D 4D **5D** **7D** 10D 14D Other________

ANALYSES REQUESTED

Cont Type * VC: VP (BTEX), PC (Chloride)
Pres Type** E, I: E,I (BTEX), I (Chloride)

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Example Volatiles by 8260 (# Cont)	BTEX	Chloride								Hold Sample (CALL___) Run PAH on Highest TPH___ Only if	REMARKS
1	MW-2	1520	5-8-15	GW			4		X	X									
2	MW-3	1510	5-8-15	GW			3		X										
3	MW-4	1450	5-8-15	GW			3		X										
4	MW-5	1433	5-8-15	GW			3		X										
5	MW-6	5-11-15	1115	GW			3		X										
6	MW-7	5-11-15	1215	GW			3		X										
7	MW-8	5-11-15	955	GW			3		X										
8	MW-9	5-11-15	1035	GW			3		X										
9																			
0																			

Lab Only:

*** Container Type Codes**
VA Vial Amber, VC Vial Clear, VP Vial Pre-preserved, GA Glass Amber, GC Glass Clear, PA Plastic Amber, PC Plastic Clear, Other________
ES Encore Sampler, TS TerraCore Sampler, AC Air Canister, TB Tedlar Bag, ZB Zip Lock Bag, PC Plastic Clear
Size(s): 2oz, 4oz, 8oz, 16oz, 32oz, 1Gal, 40ml, 125 ml, 250 ml, 500 ml, 1L, Other________

**** Preservative Type Codes**
A. None B. HNO_3 C. H_2SO_4 D. NaOH E. HCL F. MeOH G. $Na_2S_2O_3$ H. $NaHSO_4$ I. Ice J. MCAA K. ZnAc&NaOH L. Asbc Acid&NaOH O.________

^ Matrix Type Codes
GW Ground Water, WW Waste Water, DW Drinking Water, SW Surface Water, OW Ocean/Sea Water, PL Product-Liquid, PS Product-Solid, SL Sludge, Other
S Soil/Sediment/Solid, W Wipe, A Air, O Oil, T Tissue, U Urine, B Blood

Reg. Program / Clean-up Std: CTLs TRRP DW NPDES LPST DryCln Other:

STATE for Certs & Regs: FL TX GA NC SC NJ PA OK LA AL NM Other:

QA/QC Level & Certification: 1 **2** 3 4 CLP AFCEE QAPP NELAC DoD-ELAP Other:

EDDs: ADaPT SEDD ERPIMS XLS Other:

COC & Labels: Match Incomplete Absent Unclear

Coolers / Temp °C: 1 1.1 2 3 3____

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	Bill Wooley	Basin Env	5-11-15	1506	[signature]	Mail Services	5-11-15	1506
2					[signature]	Xenco	5/12/15	1320
3								
4								

Lab Use Only	YES	NO	N/A
Non-Conformances found?			
Samples intact upon arrival?			
Received on Wet Ice?			
Labeled with proper preservatives?			
Received within holding time?			
Custody seals intact?			
VOCs rec'd w/o headspace?			
Proper containers used?			
pH verified-acceptable, excl VOCs?			
Received on time to meet HTs?			

C.O.C. Serial #

B&A Laboratories: Hobbs 575-392-7550 Dallas 214-902-0300 Houston 281-242-4200 Odessa 432-563-1800 San Antonio 210-509-3334 Phoenix 602-437-0330
FTS Service Centers: Atlanta 770-449-8800 Lakeland 863-646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099

Revision Date: Nov 12, 2009

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

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

Work Order #: 507646

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

Temperature Measuring device used :

Sample Receipt Checklist	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 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 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#:

Checklist completed by: Kelsey Brooks Date: 05/12/2015

Checklist reviewed by: Kelsey 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.

Respectfully,

Kelsey Brooks
Project Manager

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

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

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 513734

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy

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

Date Received in Lab: Wed Aug-19-15 02:20 pm
Report Date: 27-AUG-15
Project Manager: Kelsey Brooks

Analysis Requested											
	Lab Id:	513734-001		513734-002		513734-003		513734-004		513734-005	
	Field Id:	MW #4		MW #3		MW #5		MW #8		MW #2	
	Depth:										
	Matrix:	WATER		WATER		WATER		WATER		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 15:00		Aug-21-15 15:00		Aug-21-15 15:00		Aug-21-15 15:00		Aug-21-15 15:00	
	Analyzed:	Aug-21-15 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

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 513631

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy

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

Date Received in Lab: Tue Aug-18-15 11:35 am
Report Date: 28-AUG-15
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	513631-001		513631-002		513631-003		513631-004			
	Field Id:	MW-2		MW-6		MW-7		MW-9			
	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 SUB: TX104704215	***Extracted:***	Aug-21-15 16:00									
	Analyzed:	Aug-24-15 07:19									
	Units/RL:	mg/L	RL								
Chloride		11500	200								

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

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** 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

Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 513631, **Project ID:** 2009-092

Lab Batch #: 975571 **Sample:** 513631-002 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 08/21/15 18:17

SURROGATE RECOVERY STUDY

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

Lab Batch #: 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 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0277	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 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0291	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 Analytes	Amount Found [A]	True Amount [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 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 513631, **Project ID:** 2009-092

Lab Batch #: 975571 **Sample:** 697295-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/21/15 17:07

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 975571 **Sample:** 513631-002 S / MS **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 08/21/15 17:24

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

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

BS / BSD Recoveries

Project Name: 14" Vac to Jal Legacy

Work Order #: 513631 **Project ID:** 2009-092

Analyst: PJB **Date Prepared:** 08/21/2015 **Date Analyzed:** 08/21/2015

Lab Batch ID: 975571 **Sample:** 697295-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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-Xylene	<0.00100	0.100	0.0883	88	0.100	0.0902	90	2	71-133	25	

Analyst: JUM **Date Prepared:** 08/21/2015 **Date Analyzed:** 08/24/2015

Lab Batch ID: 975356 **Sample:** 697003-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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

Form 3 - MS Recoveries

Project Name: 14" Vac to Jal Legacy

Work Order #: 513631

Lab Batch #: 975571 **Project ID:** 2009-092

Date Analyzed: 08/21/2015 **Date Prepared:** 08/21/2015 **Analyst:** PJB

QC- Sample ID: 513631-002 S **Batch #:** 1 **Matrix:** Ground Water

Reporting Units: mg/L

BTEX by EPA 8021B	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Benzene	<0.00100	0.100	0.0811	81	70-125	
Toluene	<0.00200	0.100	0.0803	80	70-125	
Ethylbenzene	<0.00100	0.100	0.0857	86	71-129	
m_p-Xylenes	<0.00200	0.200	0.172	86	70-131	
o-Xylene	<0.00100	0.100	0.0865	87	71-133	

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

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	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

Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 513734, **Project ID:** 2009-092

Lab Batch #: 975571 **Sample:** 513734-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/21/15 19:45

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0352	0.0300	117	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 975571 **Sample:** 513734-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/21/15 23:31

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

Lab Batch #: 975571 **Sample:** 513734-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/21/15 23:48

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 975571 **Sample:** 513734-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/22/15 00:06

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 975571 **Sample:** 513734-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/22/15 00:23

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0295	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

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

Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 513734, **Project ID:** 2009-092

Lab Batch #: 975571 **Sample:** 697295-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/21/15 18:00

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [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

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY 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	

Lab Batch #: 975571 **Sample:** 697295-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/21/15 17:07

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 975571 **Sample:** 513631-002 S / MS **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 08/21/15 17:24

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0320	0.0300	107	80-120	
4-Bromofluorobenzene	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
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: 14" Vac to Jal Legacy

Work Order #: 513734 **Project ID:** 2009-092

Analyst: PJB **Date Prepared:** 08/21/2015 **Date Analyzed:** 08/21/2015

Lab Batch ID: 975571 **Sample:** 697295-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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-Xylene	<0.00100	0.100	0.0883	88	0.100	0.0902	90	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 Recoveries

Project Name: 14" Vac to Jal Legacy

Work Order #: 513734

Lab Batch #: 975571 **Project ID:** 2009-092

Date Analyzed: 08/21/2015 **Date Prepared:** 08/21/2015 **Analyst:** PJB

QC- Sample ID: 513631-002 S **Batch #:** 1 **Matrix:** Ground Water

Reporting Units: mg/L

BTEX by EPA 8021B	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Benzene	<0.00100	0.100	0.0811	81	70-125	
Toluene	<0.00200	0.100	0.0803	80	70-125	
Ethylbenzene	<0.00100	0.100	0.0857	86	71-129	
m_p-Xylenes	<0.00200	0.200	0.172	86	70-131	
o-Xylene	<0.00100	0.100	0.0865	87	71-133	

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

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

XENCO Laboratories

☐ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☐ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**

Serial #: 322792 Page of

Company-City Basin Environmental Service Technologies **Phone** 575-396-2378

Project Name-Location 14" Line to Sal Legacy SRS#2009-092 ☐ Previously done at XENCO **Project ID**

Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other **Proj. Manager (PM)**

E-mail Results to ☐ PM and **Fax No:** 575-396-1429
cbryant@paalp.com bjarguino@basinenv.com

Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.
Bill to:

Quote/Pricing: **P.O. No:** ☐ Call for P.O.

Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP**
QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:

Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)

Sampler Name **Signature**

Lab Only: 513734

TAT: ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

	Sample ID	Sampling Date	Time	Depth ft' in" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VOA: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs	VOA: PP TCL DW Appdx-1 Appdx-2 CALL Other:	PAHs SIM 8310 8270	TX-1005 DRO GRO MA EPH MA VPH	SVOCs: Full-List DW BN&AE TCLP PP Appdx-2 CALL	OC Pesticides PCBs Herbicides OP Pesticides	Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2	SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)	EDB / DBCP	TATASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d	Addn: PAH above mg/L W, mg/Kg S Highest Hit	Hold Samples (Surcharges will apply and are pre-approved)	Sample Clean-ups are pre-approved as needed	Addn: Date Rcv. by: From:	
1	mw #4	8-10-15	1230									X													1
2	mw #3	8-10-15	1100									X													2
3	mw #5	8-10-15	1300									X													3
4	mw #8	8-10-15	1140									X													4
5	mw #2	8-10-15	1020									X													5
6																									6
7																									7
8																									8
9																									9
10																									10

Remarks

Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1) Bill Wooley	8-18-15 1520	2) Yvette Arguijano Mail Services	8-18-15 1520
3)		4)	8-19-15 1420
5)		6)	

Total Containers per COC: Cooler Temp: ~~25.8~~ °C 5.8°

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

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**)

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

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Final 1.000

XENCO Laboratories
Environmental Asbestos Radiochemistry

CHAIN OF CUSTODY RECORD

Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 12600 West I-20 East Odessa, TX 79765 (432)563-1800
Hobbs: 4008 N Grimes Hobbs, NM 88240 (575)392-7550

Page 1 of 1

LAB W.O #: 513631

Field billable Hrs :

Company:	Basin Environmental Service Technologies, LLC
Phone:	(575)396-2378
Address:	3100 Plains Hwy.
Fax:	(575)396-1429
City:	Lovington
State:	NM
Zip:	88260
PM/Attn:	Ben Arguijo
Email:	cjbryant@paalp.com, bjarguijo@basinenv.com
Project ID:	14" Vac to Jal Legacy SRS #2009-092
PO#:	PAA-C. Bryant
Invoice To:	Camille Bryant Plains All American
Quote #:	
Sampler Name:	

Circle One Event: Daily Weekly Monthly Quartely Semi-Annual Annual N/A

TAT Work Days = D Need results by: ______ Time: ______
Std (5-7D) 5Hrs 1D 2D 3D 4D 5D 7D 10D 14D Other ______

ANALYSES REQUESTED

Cont Type * VC: VP | PC
Pres Type** E, I: E,I | I
Example Volatiles by 8260: BTEX | Chloride

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	# Cont	BTEX	Chloride									Hold Sample (CALL__) Run PAH on Highest TPH__ Only If	REMARKS
1	MW-2	8-10-15	10:20	GW			4		X	X										
2	MW-3	8-10-15	11:00	GW			3		X											
3	MW-4	8-10-15	12:20	GW			3		X											
4	MW-5	8-10-15	13:00	GW			3		X											
5	MW-6 ✓	8-17-15	14:40	GW			3		X											
6	MW-7 ✓	8-17-15	14:00	GW			3		X											
7	MW-8	8-10-15	11:40	GW			3		X											
8	MW-9 ✓	8-17-15	15:20	GW			3		X											
9																				
0																				

Lab Only:

*** Container Type Codes**
VA Vial Amber; VC Vial Clear; VP Vial Pre-preserved; GA Glass Amber; GC Glass Clear; PA Plastic Amber; PC Plastic Clear; Other ______
ES Encore Sampler; TS TerraCore Sampler; AC Air Canister; TB Tedlar Bag; ZB Zip Lock Bag; PC Plastic Clear
Size(s): 2oz, 4oz, 8oz, 16oz, 32oz, 1Gal 40ml, 125 ml, 250 ml, 500 ml, 1L, Other ______

**** Preservative Type Codes**
A. None; B. HNO_3; C. H_2SO_4; D. NaOH; E. HCL; F. MeOH; G. $Na_2S_2O_3$; H. $NaHSO_4$; I. Ice; J. MCAA; K. ZnAc&NaOH; L. Asbc Acid&NaOH; O. ______

^ Matrix Type Codes
GW Ground Water; WW Waste Water; DW Drinking Water; SW Surface Water; OW Ocean/Sea Water; PL Product-Liquid; PS Product-Solid; SL Sludge; Other
S Soil/Sediment/Solid; W Wipe; A Air; O Oil; T Tissue; U Urine; B Blood

Reg. Program / Clean-up Std: CTLs TRRP DW NPDES LPST DryCln Other:

STATE for Certs & Regs: FL TX GA NC SC NJ PA OK LA AL NM Other:

QA/QC Level & Certification: 1 2 3 4 CLP AFCEE QAPP NELAC DoD-ELAP Other:

EDDs: ADaPT SEDD ERPIMS XLS Other:

COC & Labels: Match Incomplete Absent Unclear

Coolers Temp °C: 5.8° 2 3 14.0° CP 8/29/15

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	Bill Woolley	Basin Env	8-17-15	1630	Darla Resendiz	MS	8-17-15	16:30
2					[illegible signature]		8-18-15	11:35
3								
4								

Lab Use Only	YES	NO	N/A
Non-Conformances found?			
Samples intact upon arrival?			
Received on Wet Ice?			
Labeled with proper preservatives?			
Received within holding time?			
Custody seals intact?			
VOCs rec'd w/o headspace?			
Proper containers used?			
pH verified-acceptable, excl VOCs?			
Received on time to meet HTs?			

C.O.C. Serial #

B&A Laboratories: Hobbs 575-392-7550 Dallas 214-902-0300 Houston 281-242-4200 Odessa 432-563-1800 San Antonio 210-509-3334 Phoenix 602-437-0330
FTS Service Centers: Atlanta 770-449-8800 Lakeland 863-646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099

 Revision Date: Nov 12, 2009

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

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

Work Order #: 513631

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

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 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 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#:

Checklist completed by: Kelsey Brooks Date: 08/18/2015

Checklist reviewed by: 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

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,

Kelsey Brooks
Project Manager

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

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 521067

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy

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

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

Analysis Requested													
	Lab Id:	521067-001		521067-002		521067-003		521067-004		521067-005		521067-006	
	Field Id:	MW-2		MW-3		MW-4		MW-5		MW-6		MW-7	
	Depth:												
	Matrix:	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	
	Sampled:	Dec-08-15 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 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 01:52		Dec-15-15 10:21		Dec-15-15 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 12:47											
	Analyzed:	Dec-15-15 12:47											
	Units/RL:	mg/L	RL										
Chloride		8640	200										

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 521067

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: 14" Vac to Jal Legacy

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

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

Analysis Requested							
	Lab Id:	521067-007		521067-008			
	Field Id:	MW-8		MW-9			
	Depth:						
	Matrix:	GROUND WATER		GROUND WATER			
	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		

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

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** 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

Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 521067,

Project ID: 2009-092

Lab Batch #: 983560 **Sample:** 521067-001 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/15/15 01:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0355	0.0300	118	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 983560 **Sample:** 521067-003 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/15/15 02:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0351	0.0300	117	80-120	
4-Bromofluorobenzene	0.0250	0.0300	83	80-120	

Lab Batch #: 983560 **Sample:** 521067-005 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/15/15 02:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0356	0.0300	119	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 983560 **Sample:** 521067-006 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/15/15 03:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0347	0.0300	116	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 983560 **Sample:** 521067-007 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/15/15 03:31

SURROGATE RECOVERY STUDY

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

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

Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 521067,

Project ID: 2009-092

Lab Batch #: 983560 **Sample:** 521067-004 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/15/15 10:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 983560 **Sample:** 521067-002 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/15/15 10:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0354	0.0300	118	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 983560 **Sample:** 521067-008 / SMP **Batch:** 1 **Matrix:** Ground Water

Units: mg/L **Date Analyzed:** 12/15/15 15:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0327	0.0300	109	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 983560 **Sample:** 702211-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 12/14/15 22:00

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0340	0.0300	113	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 983560 **Sample:** 702211-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 12/14/15 21:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: 14" Vac to Jal Legacy

Work Orders : 521067,

Project ID: 2009-092

Lab Batch #: 983560 **Sample:** 702211-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 12/14/15 21:26

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	

Lab Batch #: 983560 **Sample:** 520899-010 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 12/15/15 00:12

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0355	0.0300	118	80-120	
4-Bromofluorobenzene	0.0256	0.0300	85	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: 14" Vac to Jal Legacy

Work Order #: 521067 **Project ID:** 2009-092

Analyst: SYG **Date Prepared:** 12/14/2015 **Date Analyzed:** 12/14/2015

Lab Batch ID: 983560 **Sample:** 702211-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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	0.0878	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 **Date Prepared:** 12/15/2015 **Date Analyzed:** 12/15/2015

Lab Batch ID: 983545 **Sample:** 702159-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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

Form 3 - MS Recoveries

Project Name: 14" Vac to Jal Legacy

Work Order #: 521067

Lab Batch #: 983560 **Project ID:** 2009-092

Date Analyzed: 12/15/2015 **Date Prepared:** 12/14/2015 **Analyst:** SYG

QC- Sample ID: 520899-010 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

BTEX by EPA 8021B Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Benzene	0.00838	0.100	0.0966	88	70-125	
Toluene	<0.00200	0.100	0.0805	81	70-125	
Ethylbenzene	0.00188	0.100	0.0890	87	71-129	
m_p-Xylenes	0.00323	0.200	0.182	89	70-131	
o-Xylene	<0.00100	0.100	0.0850	85	71-133	

Lab Batch #: 983545

Date Analyzed: 12/15/2015 **Date Prepared:** 12/15/2015 **Analyst:** MNR

QC- Sample ID: 521067-001 S **Batch #:** 1 **Matrix:** Ground Water

Reporting Units: mg/L

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY 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

XENCO Laboratories
Environmental Asbestos Radiochemistry

CHAIN OF CUSTODY RECORD

Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 12600 West I-20 East Odessa, TX 79765 (432)563-1800
Hobbs: 4008 N Grimes Hobbs, NM 88240 (575)392-7550

Page 1 of 1

LAB W.O #: 521067

Field billable Hrs :

Company: Basin Environmental Service Technologies, LLC	Phone: (575)396-2378
Address: 3100 Plains Hwy.	Fax: (575)396-1429
City: Lovington State: NM	Zip: 88260
PM/Attn: Ben Arguijo	Email: cjbryant@paalp.com, bjarguijo@basinenv.com
Project ID: 14" Vac to Jal Legacy SRS #2009-092	PO#: PAA-C. Bryant
Invoice To: Camille Bryant Plains All American	Quote #:
Sampler Name: Bill Wooley	Circle One Event: Daily Weekly Monthly Quarterly Semi-Annual Annual N/A

TAT Work Days = D Need results by: Time:

Std (5-7D) 5Hrs 1D 2D 3D 4D 5D 7D 10D 14D Other

ANALYSES REQUESTED

Cont Type: VP | PC
Pres Type: E,I | I
Analyses: BTEX | Chloride

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code	Field Filtered	Integrity OK (Y/N)	Total # of containers	BTEX	Chloride								Hold Sample (CALL)	Run PAH on Highest TPH Only
1	MW-2	12-8-15	1130	GW			4	X	X									
2	MW-3	12-8-15	1040	GW			3	X										
3	MW-4	12-8-15	820	GW			3	X										
4	MW-5	12-7-15	1030	GW			3	X										
5	MW-6	12-7-15	1115	GW			3	X										
6	MW-7	12-8-15	1000	GW			3	X										
7	MW-8	12-8-15	1125	GW			3	X										
8	MW-9	12-8-15	9100	GW			3	X										
9																		
0																		

*** Container Type Codes**

VA Vial Amber; VC Vial Clear; VP Vial Pre-preserved; GA Glass Amber; GC Glass Clear; PA Plastic Amber; PC Plastic Clear; Other; ES Encore Sampler; TS TerraCore Sampler; AC Air Canister; TB Tedlar Bag; ZB Zip Lock Bag; PC Plastic Clear

Size(s): 2oz, 4oz, 8oz, 16oz, 32oz, 1Gal, 40ml, 125 ml, 250 ml, 500 ml, 1L, Other

**** Preservative Type Codes**

A. None; B. HNO_3; C. H_2SO_4; D. NaOH; O. ; E. HCL; F. MeOH; G. $Na_2S_2O_3$; H. $NaHSO_4$; I. Ice; J. MCAA; K. ZnAc&NaOH; L. Asbc Acid&NaOH

^ Matrix Type Codes

GW Ground Water; WW Waste Water; DW Drinking Water; SW Surface Water; OW Ocean/Sea Water; PL Product-Liquid; PS Product-Solid; SL Sludge; Other; S Soil/Sediment/Solid; W Wipe; A Air; O Oil; T Tissue; U Urine; B Blood

REMARKS

Reg. Program / Clean-up Std: CTLs TRRP DW NPDES LPST DryCln Other:

STATE for Certs & Regs: FL TX GA NC SC NJ PA OK LA AL NM Other:

QA/QC Level & Certification: 1 2 3 4 CLP AFCEE QAPP NELAC DoD-ELAP Other:

EDDs: ADaPT SEDD ERPIMS XLS Other:

COC & Labels: Match Incomplete Absent Unclear

Coolers Temp °C: 1 13 2 3 7.6°C

	Relinquished by:	Affiliation	Date	Time	Received by:	Affiliation	Date	Time
1	Bill Wooley	Basin	12-9-15	1150	[signature]	MS	12/9/15	
2					[signature]	Xenco	12/10/15	12:30
3								
4								

Lab Use Only: YES NO N/A
Non-Conformances found?
Samples intact upon arrival?
Received on Wet Ice?
Labeled with proper preservatives?
Received within holding time?
Custody seals intact?
VOCs rec'd w/o headspace?
Proper containers used?
pH verified-acceptable, excl VOCs?
Received on time to meet HTs?

B&A Laboratories: Hobbs 575-392-7550 Dallas 214-902-0300 Houston 281-242-4200 Odessa 432-563-1800 San Antonio 210-509-3334 Phoenix 602-437-0330
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 #

 Revision Date: Nov 12, 2009

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 12/10/2015 12:30:00 PM

Work Order #: 521067

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

Temperature Measuring device used : r8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	7.6
#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 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#: OC679789

Checklist completed by: Carley Owens — Date: 12/11/2015

Carley Owens

Checklist reviewed by: Kelsey Brooks — Date: 12/14/2015

Kelsey Brooks

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

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

State of New Mexico
Energy Minerals and Natural Resources

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

RECEIVED
APR 20 2009
HOBBSOCD

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Plains Pipeline, LP	Contact	Jason Henry
Address	2530 Hwy 214 – Denver City, Tx 79323	Telephone No.	(575) 441-1099
Facility Name	14 – inch Vac to Jal Legacy	Facility Type	Pipeline

Surface Owner	Mineral Owner	Lease No.
Legacy Petroleum		

LOCATION OF RELEASE

NEAREST WELL API # 30-025-11759-00-00

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	25	25S	37E					Lea

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

NATURE OF RELEASE

Type of Release: Crude Oil	Volume of Release: 250 bbls	Volume Recovered: 0 bbls
Source of Release: 14" Steel Pipeline	Date and Hour of Occurrence: 04/09/2009	Date and Hour of Discovery: 04/09/2009 10:00 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Larry Johnson	
By Whom? Jason Henry	Date and Hour: 04/09/2009 @ 14:20	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

WATER @ 55'

Describe Cause of Problem and Remedial Action Taken.*

During the purging of the 14-inch Sweet Vac to Jal Line, a release of crude oil occurred due to external corrosion. Throughput for the subject line is 0 bbls/day because the line is inactive and was being purged at the time of the release. The depth of the pipeline at the release point is approximately 2' bgs. The H2S concentration in the crude is less than 10 ppm and the gravity of the crude is 38.

Describe Area Affected and Cleanup Action Taken.*

The released crude resulted in a surface stain that measured approximately 300' x 300'. The impacted area will be remediated per applicable guidelines.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Jason Henry

Printed Name: Jason Henry

Title: Remediation Coordinator

E-mail Address: jhenry@paalp.com

Date: 04/20/2009 Phone: (575) 441-1099

OIL CONSERVATION DIVISION

Approved by ~~District Supervisor:~~ ENV ENGR Geoffrey Leking

Approval Date: 04/21/09 Expiration Date: 06/22/09

Conditions of Approval: DELINEATE TO CLEANUP. SUBMIT FINAL C-141 BY 06/22/09.

Attached ☐

* Attach Additional Sheets If Necessary

1RP - 2162 (04.4)

fGRL0912457808