Basin Environmental Service Technologies, LLC

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Effective Solutions

REMEDIATION SUMMARY &

RISK-BASED SITE CLOSURE REQUEST

PLAINS PIPELINE, LP
LEA TO JAL 8-INCH LINE 1 PUMP
Plains SRS #2014-014
Lea County, New Mexico
Unit Letter "F" (SE/NW), Section 28, Township 20 South, Range 37 East
Latitude 32.546569° North, Longitude 103.258268° West
NMOCD Reference #1RP-01-14-3011

Prepared For:

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

approved
Environmental Specialist
NMOCD - DIST 1
7/01/14

Prepared By:

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

June 2014

Ben J. Arguijo
Project Manager

PTO 1419041410

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

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	Camille Bryant
Address	2530 State Hwy. 214, Denver City, TX 79323	Telephone No.	(575) 441-1099
Facility Name	Lea to Jal 8" Line 1 Pump	Facility Type	Pump

Surface Owner Plains Pipeline, L.P.	Mineral Owner	Lease No. HOBBS OCD

LOCATION OF RELEASE

AP# 30-025-12803 JRL 1/28/14

JAN 28 2014

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	28	20S	37E					Lea

Latitude N 32.546569° Longitude W 103.258268°

RECEIVED

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release 240 bbls	Volume Recovered 190 bbls
Source of Release Pump	Date and Hour of Occurrence 01/22/2014 @ 02:00	Date and Hour of Discovery 01/22/2014 @ 02:00
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Verbal notification to Geoff Leking	
By Whom? Camille Bryant	Date and Hour 01/22/2014 @ 15:30	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

DTW = 25' JRL 1/28/14

Describe Cause of Problem and Remedial Action Taken.* An outboard bearing on a centrifugal pump failed causing a major seal failure resulting in a crude oil release.

Describe Area Affected and Cleanup Action Taken. The released crude oil impacted approximately 12,100 square feet inside Plains Pipeline Lea Station. The impacted area will be remediated as per applicable NMOCD 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: Camille Bryant

Printed Name: Camille Bryant

Title: Remediation Coordinator

E-mail Address: cjbryant@paalp.com

Date: 1/28/2014 Phone: (575) 441-1099

OIL CONSERVATION DIVISION

Approved by District Supervisor: Geoffrey Leking
Environmental Specialist

Approval Date: 1/28/14 Expiration Date: 3/28/14

Conditions of Approval: SUBMIT FINAL C-141 BY 3/28/14

Attached ☐ IRP-01-14-3011

* Attach Additional Sheets If Necessary

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FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION & BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin Environmental), on behalf of Plains Pipeline, LP (Plains), has prepared this *Remediation Summary & Risk-Based Site Closure Request* for the release site known as Lea to Jal 8-Inch Line 1 Pump. The legal description of the release site is Unit Letter "F" (SE/NW), Section 28, Township 20 South, Range 37 East, in Lea County, New Mexico. The geographic coordinates of the release site are 32.546569° North latitude and 103.258268° West longitude. The property affected by the release is owned by Plains. A "Site Location Map" is provided as Figure 1.

On January 22, 2014, Plains discovered a release had occurred at its Lea Station crude oil pumping facility. An outboard bearing on the Line 1 centrifugal pump failed, causing a major seal failure and resulting in a release of crude oil. During initial response activities, the pump was repaired, and a vacuum truck was utilized to recover free-standing liquid. Heavily impacted soil near the point of release was scraped up and stockpiled on-site, pending final disposition.

The release was immediately reported to the New Mexico Oil Conservation Division (NMOCD) Hobbs District Office. The "Release Notification and Corrective Action" (Form C-141) indicated approximately two hundred and forty barrels (240 bbls) of crude oil were released and approximately one hundred and ninety barrels (190 barrels) were recovered, for a net loss of approximately fifty barrels (50 bbls).

The release affected approximately twelve thousand, one hundred square feet (12,100 ft^2) inside Lea Station and impacted an area which had been affected by a previous release in 2005 and had undergone remediation in 2005 and 2007. The 2014 release followed roughly the same flow path as the 2005 release, and the primary pooling area impacted a section of the historical excavation which had been lined with twenty-millimeter (20mm) plastic at approximately five and one-half feet (5.5') below ground surface (bgs). See NMOCD file #1RP-1157 for details of historical remediation activities.

The Form C-141 is provided as Appendix C. General photographs of the release site are provided as Appendix A.

2.0 NMOCD SITE CLASSIFICATION

A search of the New Mexico Water Rights Reporting System (NMWRRS) database maintained by the New Mexico Office of the State Engineer (NMOSE) indicated depth-to-groundwater in Section 28, Township 20 South, Range 37 East is approximately forty feet (40') bgs. A depth-to-groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately twenty-five feet (25') bgs. Based on the NMOCD ranking system, twenty (20) points will be assigned to the site as a result of this criterion.

A search of the NMWRRS database indicated a single domestic-use water well bore is located approximately three hundred and fifty feet (350') to the west-northwest of the release point. The well bore was abandoned in the late 1960's, but never plugged. It is not equipped with a pump, pipes, or other appurtenances for fresh water extraction. Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

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

NMOCD guidelines indicate the Lea to Jal 8-Inch Line 1 Pump release site has an initial ranking score of twenty (20) points. The soil remediation levels for a site with a ranking score greater than nineteen (>19) points are as follows:

- Benzene – 10 mg/Kg (ppm)
- Benzene, ethylbenzene, toluene, and xylenes (BTEX) – 50 mg/Kg (ppm)
- Total petroleum hydrocarbons (TPH) – 100 mg/Kg (ppm)

The New Mexico Administrative Code (NMAC) does not currently specify a remediation level for chloride concentrations in soil. Chloride remediation levels are set by the NMOCD on a site-specific basis.

3.0 SUMMARY OF SOIL REMEDIATION ACTIVITIES

On January 27, 2014, following initial response activities, excavation of impacted soil commenced at the site. Visual and olfactory senses were used to guide the excavation. To facilitate remediation activities, the excavation was divided into five (5) sections: Release Point, Flow Path, Runoff Area, Pooling Area, and Main Excavation. The Release Point section of the excavation was located adjacent to and around the Line 1 pump. The Runoff Area section was located approximately fifty feet (50') to the south-southwest of the point of release. The Main Excavation was advanced in the primary pooling area of the release, approximately one hundred and ninety feet (190') to the west-southwest of the point of release. The Flow Path section of the excavation was advanced along the flow path of the release, between the Release Point section and the Main Excavation. The Pooling Area section was located adjacent to, and to the west of, the Main Excavation. Excavated soil was stockpiled on-site, pending final disposition.

A composite soil sample (Stockpile) was collected from the stockpiled material and submitted to Xenco Laboratories, Inc., in Odessa, Texas, for analysis of TPH and chloride concentrations using Environmental Protection Agency (EPA) Methods SW 846-8015M and 300.1, respectively. Laboratory analytical results indicated the TPH concentration in soil sample Stockpile was 37,100 mg/kg, and the chloride concentration was 9.47 mg/kg. Table 1 summarizes the "Concentrations of Benzene, BTEX, TPH & Chloride in Soil". Soil sample locations are depicted in Figure 2, "Site & Sample Location Map". Laboratory analytical reports are provided as Appendix B.

From January 27 through February 11, 2014, approximately one thousand, three hundred and ten cubic yards (1,310 yd^3) of impacted soil was excavated and transported to C&C Landfarm, Inc. (NMOCD Permit #NM-01-012), for disposal.

On February 12, 2014, a total of eighteen (18) confirmation soil samples were collected from the floor and sidewalls of the excavation, including eight (8) samples (N Wall, S Wall, E Wall #1, E Wall #2, W Wall #1, W Wall #2, Floor #1, Floor #2) from the Main Excavation, three (3) samples (Runoff Area NW Wall, Runoff Area S Wall, and Runoff Area Floor) from the Runoff Area section, four (4) samples (Flowpath N Wall, Flowpath S Wall, Flowpath Floor #1, Flowpath Floor #2) from the Flow Path section, and three (3) samples (Pooling Area E Wall, Pooling Area W

Wall, and Pooling Area Floor) from the Pooling Area section. The soil samples were submitted to the laboratory for analysis of TPH and chloride concentrations. The soil samples were also analyzed for concentrations of BTEX using EPA Method SW 846-8021b. Laboratory analytical results indicated BTEX constituent concentrations were less than the appropriate laboratory method detection limit (MDL) in all submitted soil samples. TPH concentrations ranged from less than the laboratory MDL in soil samples N Wall, Runoff Area NW Wall, Runoff Area S Wall, Runoff Area Floor, Flowpath S Wall, Pooling Area E Wall, Pooling Area W Wall, and Pooling Area Floor to 837 mg/kg in soil sample Flowpath Floor #1. Chloride concentrations ranged from 3.09 mg/kg in soil sample E Wall #1 to 7.02 mg/kg in soil sample Flowpath Floor #1.

Review of laboratory analytical results indicated additional excavation would be required in the areas represented by soil samples S Wall, East Wall #1, East Wall #2, Floor #1, Flowpath N Wall, Flowpath Floor #1, and Flowpath Floor #2.

On February 26, 2014, one (1) soil sample (Release Point Floor) was collected from the floor of the Release Point section of the excavation. The soil sample was submitted to the laboratory for analysis of BTEX, TPH, and chloride concentrations. Laboratory analytical results indicated BTEX constituent concentrations were less than the appropriate laboratory MDL. The TPH concentration was 22.6 mg/kg, and the chloride concentration was 3.39 mg/kg.

On March 7, 2014, representatives of Plains and Basin Environmental met with a representative of the NMOCD Hobbs District Office to discuss remediation activities conducted at the release site up to that point and to determine a path forward to an NMOCD-approved closure. Permission was requested to leave contaminated soil above the recommended remediation action level (RRAL) for TPH in-situ, particularly in areas where additional remediation was impracticable due to the presence of active pipelines, electrical conduit, and/or utility poles adjacent to the excavation. The NMOCD representative approved the request to leave soil represented by samples Flowpath N Wall, Flowpath Floor #1, and Flowpath Floor #2 in-situ. However, further excavation was required in the areas represented by soil samples S Wall, East Wall #1, East Wall #2, and Floor #1.

On May 1, 2014, the excavation was advanced in the areas represented by soil samples S Wall, East Wall #1, East Wall #2, and Floor #1. Two (2) confirmation soil samples (East Wall #2b and South Wall b) were collected from the sidewalls of the excavation and submitted to the laboratory for analysis of BTEX, TPH, and chloride concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory MDL. Chloride concentrations ranged from 4.23 mg/kg in soil sample South Wall b to 4.28 mg/kg in soil sample East Wall #2b.

Following excavation and sample collection, an additional twelve cubic yards (12 yd^3) of impacted soil was transported to C&C Landfarm, Inc., for disposal.

Due to a sampling error, it was determined that re-sampling of the further excavated areas represented by soil samples East Wall #1 and Floor #1 would be required.

On May 7, 2014, two (2) soil samples (East Wall #1b and Floor #1b) were collected from the sidewall of the excavation and submitted to the laboratory for analysis of BTEX, TPH, and chloride concentrations. Laboratory analytical results indicated chloride and BTEX constituent

concentrations were less than the appropriate laboratory MDL. TPH concentrations ranged from less than the laboratory MDL in soil sample East Wall #1b to 90.1 mg/kg in soil sample Floor #1b.

On May 19, 2014, representatives of Plains and Basin Environmental met with a representative of the NMOCD Hobbs District Office to request permission to backfill the excavation. The request was approved by the NMOCD representative.

Based on laboratory analytical results, and with NMOCD approval, from May 30 to June 3, 2014, the excavation was backfilled with locally obtained, non-impacted material, compacted, and contoured to fit the surrounding topography.

Prior to backfilling the final dimensions of the Main Excavation were approximately one hundred and forty-one feet (141') in length, ranging in width from approximately thirty-five feet (35') to forty-six feet (46'), and ranging in depth from approximately three feet (3') to four feet (4') bgs. The final dimensions of the Release Point section of the excavation were approximately one hundred feet (100') in length, varying in width from approximately five feet (5') to forty-three feet (43'), and varying in depth from approximately six inches (6') to two feet (2') bgs. Final dimensions of the Runoff Area section were approximately forty feet (40') in length, ranging in width from approximately six feet (6') to fourteen feet (14'), and approximately three feet (3') in depth. Final dimensions of the Flow Path section were approximately one hundred and fifteen feet (115') in length, ranging in width from approximately four feet (4') to approximately fourteen feet (14'), and ranging in depth from approximately six inches (6") to one and one-half feet (1.5') bgs. Final dimensions of the Pooling Area section were approximately sixty-five feet (65') in length, ranging in width from approximately nineteen feet (19') to thirty feet (30'), and ranging in depth from approximately one foot (1') to two feet (2') bgs.

4.0 QA/QC PROCEDURES

4.1 Soil Sampling

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

The soil samples were analyzed as follows:

- BTEX concentrations in accordance with EPA Method SW 846-8021b
- TPH concentrations in accordance with modified EPA Method SW 846-8015M
- Chloride concentrations in accordance with EPA Method 300.1

4.2 Decontamination of Equipment

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

4.3 Laboratory Protocol

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

5.0 SITE CLOSURE REQUEST

Soil samples collected from the Lea to Jal 8-Inch Line 1 Pump release site were analyzed by an NMOCD-approved laboratory, and concentrations of benzene, BTEX, and chloride were below the RRAL's established for the site. Soil exhibiting TPH concentrations above the RRAL will be remediated upon deactivation/decommission of the currently active pump station.

Basin Environmental recommends Plains provide the NMOCD Hobbs District Office a copy of this *Remediation Summary & Risk-Based Site Closure Request* and request the NMOCD grant site closure to the Lea to Jal 8-Inch Line 1 Pump release site.

6.0 LIMITATIONS

Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary & Risk-Based Site Closure Request* 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 Pipeline, LP. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Service Technologies, LLC, and/or Plains Pipeline, LP.

7.0 DISTRIBUTION:

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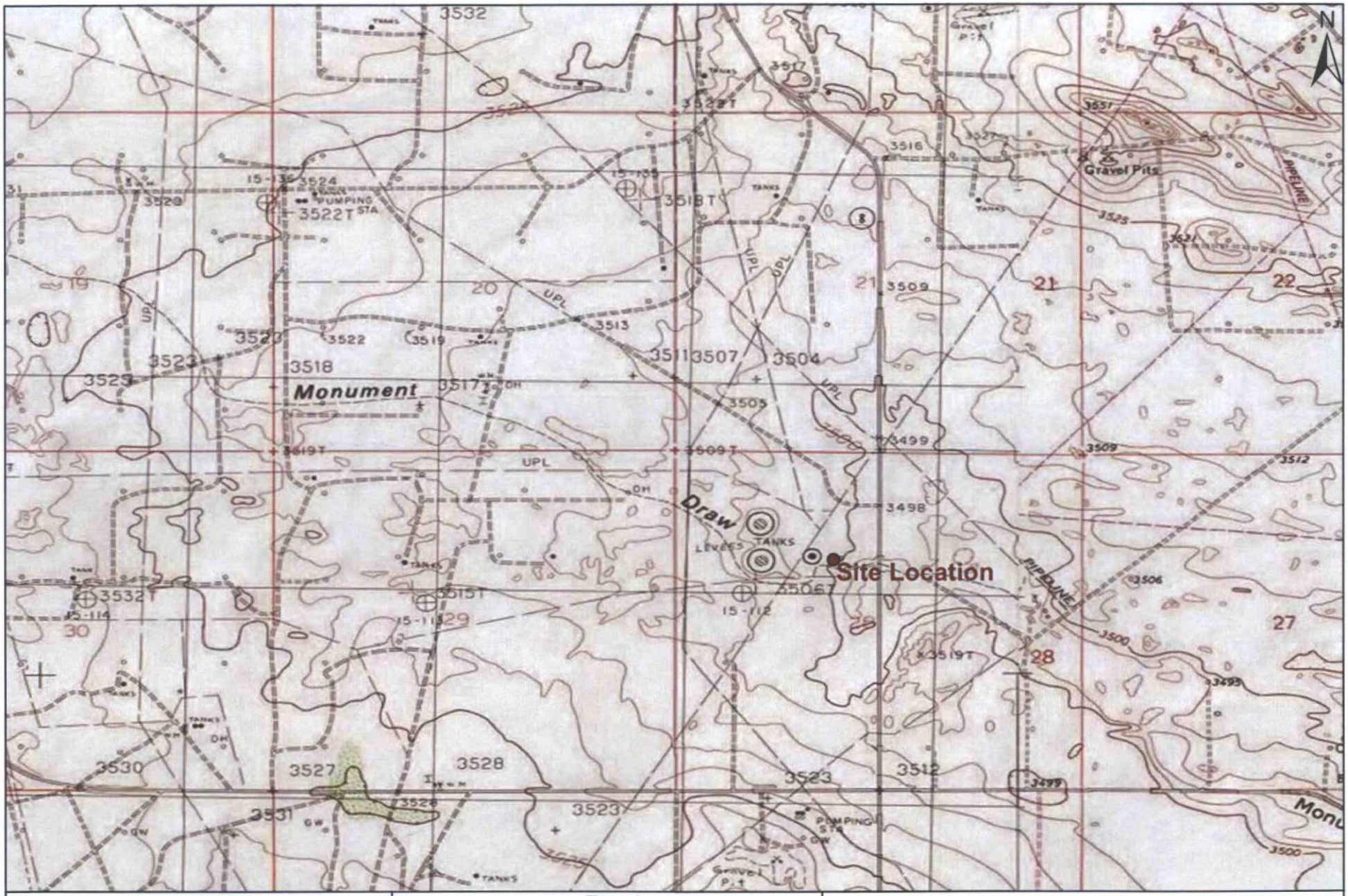


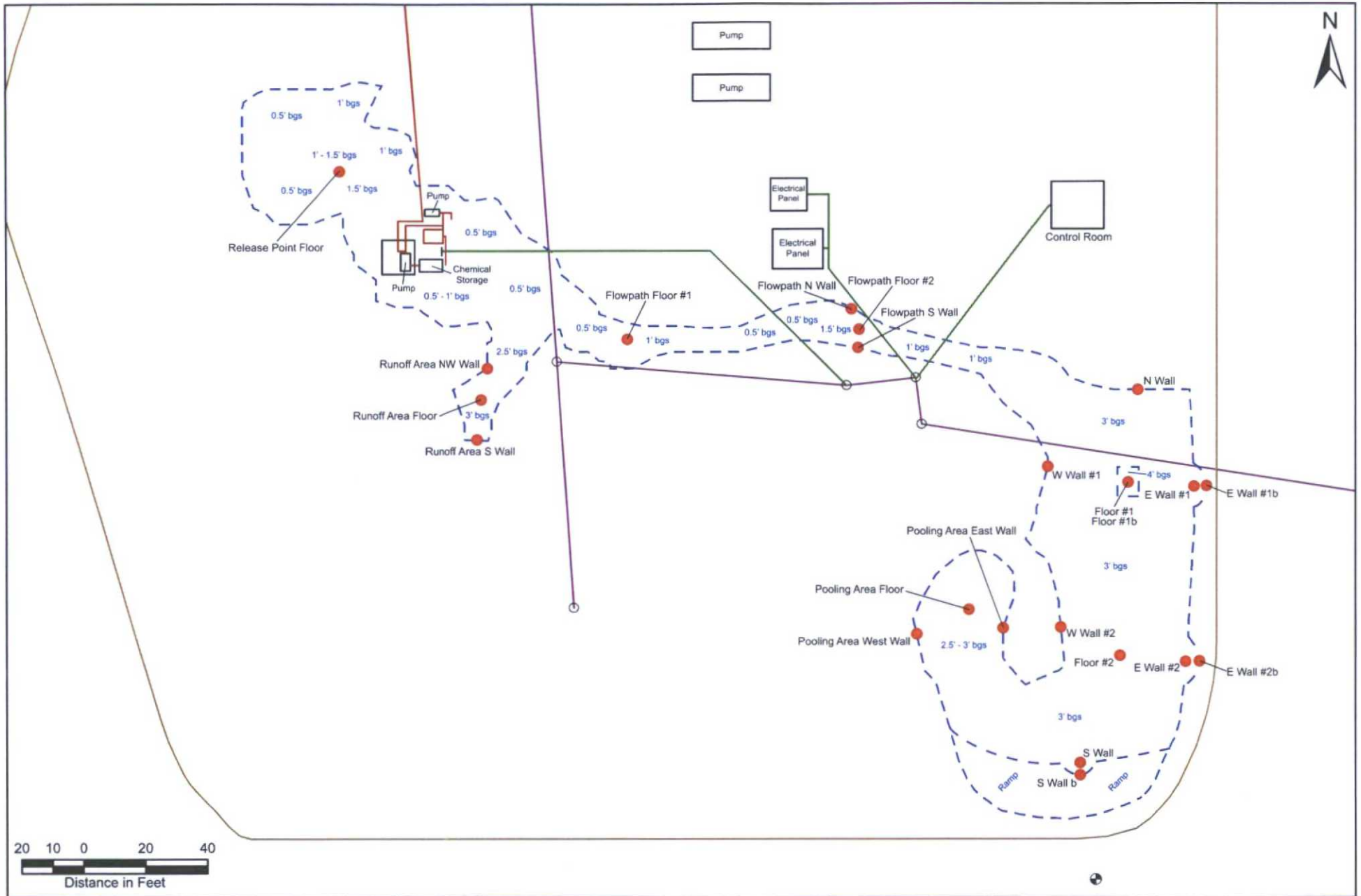
1,000 500 0 1,000 2,000
Distance in Feet

Figure 1
Site Location Map
Plains Marketing, LP
Lea to Jal 8" Line 1 Pump
Lea County, New Mexico
Plains SRS #: 2014-014
NMOCD Reference #: 1RP-01-14-3011

Basin Environmental Service Technologies
Effective Solutions

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

Drawn By: BJA	Checked By: BRB
February 5, 2014	Scale: 1" = 2,000'



Legend

- Excavation Extent
- Pipeline
- Berm
- Power Line (Overhead)
- Power Line (Buried)
- Sample Location
- Monitor Well
- Utility Pole

Figure 2
Site & Sample Location Map
Plains Marketing, LP
Lea to Jal 8-Inch Line 1 Pump
Lea County, New Mexico
Plains Ref. #: 2014-014
NMOCD Ref. #: 1RP-1-14-3011

Basin Environmental Service Technologies
Effective Solutions

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

Drawn By: BJA	Checked By: BRB
May 5, 2014	Scale: 1" = 40'

TABLE 1
CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

PLAINS MARKETING, LP
LEA TO JAL 8-INCH LINE 1 PUMP
LEA COUNTY, NEW MEXICO
PLAINS SRS #: 2014-014
NMOCD REFERENCE #: 1RP-1-14-3011

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030							METHOD: 8015M			TOTAL TPH C_6-C_{35} (mg/Kg)	300.1
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	M.P. - XYLENES (mg/Kg)	O-XYLENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C_6-C_{12} (mg/Kg)	DRO C_{12}-C_{28} (mg/Kg)	ORO C_{28}-C_{35} (mg/Kg)		CHLORIDE (mg/Kg)
Stockpile	N/A	1/27/2014	Stockpiled	-	-	-	-	-	-	-	15,400	21,700	<319	**37,100**	9.47
N Wall	2'	2/12/2014	In-Situ	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0023	<0.0023	<17.4	<17.4	<17.4	<17.4	4.93
S Wall	2'	2/12/2014	Excavated	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<0.0021	<15.6	105	<15.6	**105**	3.43
E Wall #1	2'	2/12/2014	Excavated	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<15.3	313	62.9	**376**	3.09
E Wall #2	2'	2/12/2014	Excavated	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<15.2	98.3	23.5	**122**	3.15
W Wall #1	2'	2/12/2014	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<0.0021	<15.7	27.2	<15.7	27.2	3.11
W Wall #2	2'	2/12/2014	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<0.0021	<15.6	23.9	<15.6	23.9	6.18
Floor #1	3'	2/12/2014	Excavated	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<0.0022	<16.3	115	20.9	**136**	3.22
Floor #2	3'	2/12/2014	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<0.0022	<16.7	21.6	<16.7	21.6	3.34
Runoff Area NW Wall	2'	2/12/2014	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<0.0021	<15.8	<15.8	<15.8	<15.8	3.72
Runoff Area S Wall	2'	2/12/2014	In-Situ	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<0.0023	<17.1	<17.1	<17.1	<17.1	4.30
Runoff Area Floor	3'	2/12/2014	In-Situ	<0.0013	<0.0026	<0.0013	<0.0026	<0.0013	<0.0026	<0.0026	<19.1	<19.1	<19.1	<19.1	3.64
Flowpath N Wall	1'	2/12/2014	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<15.3	303	64.7	**368**	4.27
Flowpath S Wall	1'	2/12/2014	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<0.0021	<15.6	<15.6	<15.6	<15.6	4.41
Flowpath Floor #1	1.5'	2/12/2014	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<0.0022	<16.9	697	140	**837**	7.02
Flowpath Floor #2	1'	2/12/2014	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<0.0022	<16.8	164	36.9	**201**	3.60
Pooling Area E Wall	3'	2/12/2014	In-Situ	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0023	<0.0023	<17.5	<17.5	<17.5	<17.5	3.75
Pooling Area W Wall	2'	2/12/2014	In-Situ	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0023	<0.0023	<17.3	<17.3	<17.3	<17.3	4.06
Pooling Area Floor	2'	2/12/2014	In-Situ	<0.0012	<0.0024	<0.0012	<0.0024	<0.0012	<0.0024	<0.0024	<17.7	<17.7	<17.7	<17.7	3.47
Release Point Floor	2'	2/26/2014	In-Situ	<0.0012	<0.0025	<0.0012	<0.0025	<0.0012	<0.0025	<0.0025	<18.4	22.6	<18.4	22.6	3.39
East Wall #2b	2'	5/1/2014	In-Situ	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0023	<0.0023	<17.4	<17.4	<17.4	<17.4	4.28
South Wall b	2'	5/1/2014	In-Situ	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0023	<0.0023	<17.4	<17.4	<17.4	<17.4	4.23
East Wall #1b	2'	5/7/2014	In-Situ	<0.0013	<0.0025	<0.0013	<0.0025	<0.0013	<0.0025	<0.0025	<18.9	<18.9	<18.9	<18.9	<2.53
Floor #1b	4'	5/7/2014	In-Situ	<0.0013	<0.0026	<0.0013	<0.0026	<0.0013	<0.0026	<0.0026	23.7	66.4	<19.2	90.1	<2.56
NMOCD Recommended Remediation Action Level				**10**						**50**				**100**	**250**

- = Not analyzed.

Lea to Jal 8-Inch Line 1 Pump - Release Site (Looking West)

Lea to Jal 8-Inch Line 1 Pump - Release Site (Looking Southwest)

Lea to Jal 8-Inch Line 1 Pump - Release Site (Looking Northwest)

Lea to Jal 8-Inch Line 1 Pump - Release Site (Looking East)

Lea to Jal 8-Inch Line 1 Pump – Runoff Area (Looking Northwest)

Lea to Jal 8-Inch Line 1 Pump – Flow Path (Looking East)

Lea to Jal 8-Inch Line 1 Pump – Primary Pooling Area (Looking North)

Lea to Jal 8-Inch Line 1 Pump – Primary & Secondary Pooling Areas (Looking North)

Lea to Jal 8-Inch Line 1 Pump – Secondary Pooling Area (Looking Northeast)

Lea to Jal 8-Inch Line 1 Pump – Excavation, Release Point
(Looking North-Northwest)

Lea to Jal 8-Inch Line 1 Pump – Excavation, Release Point (Looking West-Northwest)

Lea to Jal 8-Inch Line 1 Pump – Excavation, Runoff Area (Foreground) &
Release Point (Background; Looking North-Northwest)

Lea to Jal 8-Inch Line 1 Pump – Excavation, Runoff Area (Looking South)

Lea to Jal 8-Inch Line 1 Pump – Excavation, Flow Path (Looking West)

Lea to Jal 8-Inch Line 1 Pump – Excavation, Flow Path (Looking West)

Lea to Jal 8-Inch Line 1 Pump – Excavation, Flow Path (Looking West)

Lea to Jal 8-Inch Line 1 Pump – Main Excavation (Background) &
Pooling Area (Foreground; Looking Northeast)

Lea to Jal 8-Inch Line 1 Pump – Main Excavation (Looking South-Southwest)

Lea to Jal 8-Inch Line 1 Pump – Main Excavation (Looking South)

Lea to Jal 8-Inch Line 1 Pump – Floor of Main Excavation (Looking North)

Lea to Jal 8-Inch Line 1 Pump – Floor of Main Excavation (Looking South-Southwest)

Lea to Jal 8-Inch Line 1 Pump – Excavation, Pooling Area (Looking Southeast)

Lea to Jal 8-Inch Line 1 Pump – Main Excavation, Following Backfill (Looking South)

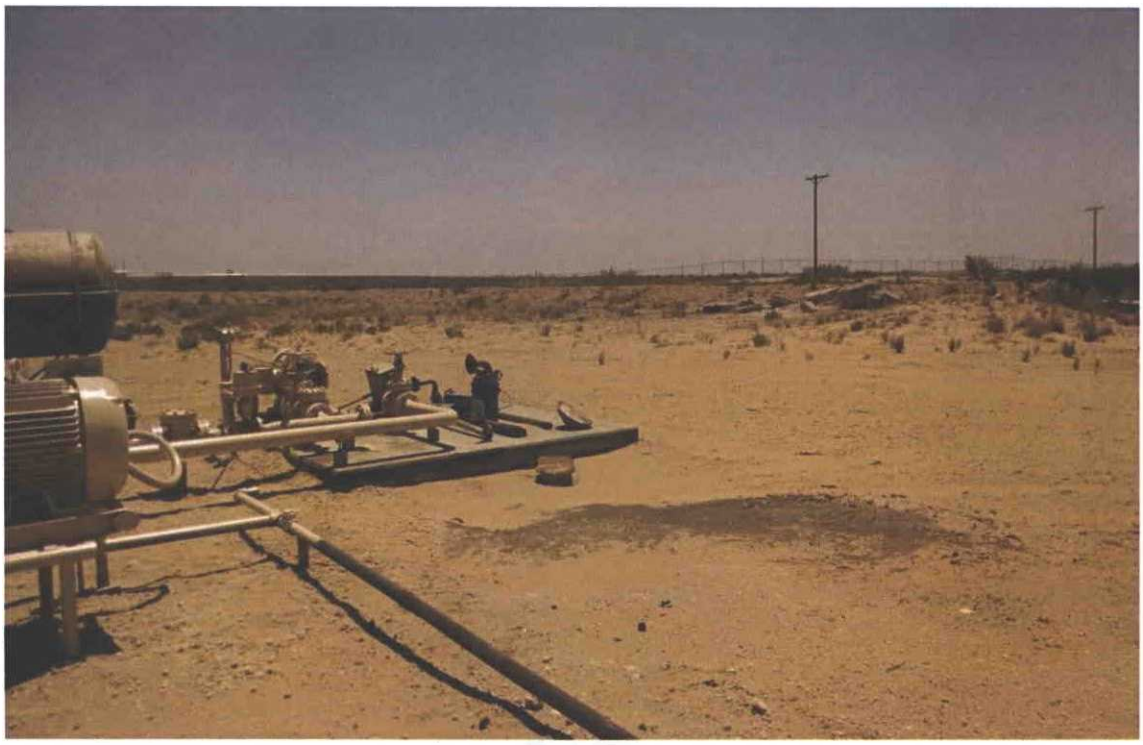
Lea to Jal 8-Inch Line 1 Pump – Main Excavation (Left) & Pooling Area (Right), Following Backfill (Looking Southeast)

Lea to Jal 8-Inch Line 1 Pump – Pooling Area, Following Backfill (Looking South)

Lea to Jal 8-Inch Line 1 Pump – Flow Path, Following Backfill (Looking West)

Lea to Jal 8-Inch Line 1 Pump – Runoff Area, Following Backfill (Looking South)

Lea to Jal 8-Inch Line 1 Pump – Release Point, Following Backfill (Looking West-Southwest)



Lea to Jal 8-Inch Line 1 Pump – Release Point, Following Backfill (Looking Southwest)

Lea to Jal 8-Inch Line 1 Pump – Release Point, Following Backfill (Looking Southwest)

Analytical Report 478290

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Lea to Jal 8" Line 1 Pump

SRS# 2014-014

04-FEB-14

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-16-TX), 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)
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)

XENCO Laboratories

04-FEB-14

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

Reference: XENCO Report No(s): **478290**
Lea to Jal 8" Line 1 Pump
Project Address: 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) 478290. 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. 478290 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 478290

PLAINS ALL AMERICAN EH&S, Midland, TX

Lea to Jal 8" Line 1 Pump

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Stockpile	S	01-27-14 10:00		478290-001

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 478290

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Lea to Jal 8" Line 1 Pump

Project Id: SRS# 2014-014
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Tue Jan-28-14 04:28 pm
Report Date: 04-FEB-14
Project Manager: Kelsey Brooks

Analysis Requested								
	Lab Id:	478290-001						
	Field Id:	Stockpile						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Jan-27-14 10:00						
Percent Moisture	*Extracted:*							
	Analyzed:	Jan-31-14 13:10						
	Units/RL:	%	RL					
Percent Moisture		6.24	1.00					
TPH By SW8015 Mod	*Extracted:*	Jan-29-14 15:00						
	Analyzed:	Jan-29-14 22:10						
	Units/RL:	mg/kg	RL					
C6-C12 Gasoline Range Hydrocarbons		15400	319					
C12-C28 Diesel Range Hydrocarbons		21700	319					
C28-C35 Oil Range Hydrocarbons		ND	319					
Total TPH		37100	319					

Kelsey Brooks
Project Manager

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 478290,

Project ID: SRS# 2014-014

Lab Batch #: 932998 **Sample:** 478290-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/29/14 22:10

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.8	104	70-135	
o-Terphenyl	39.5	49.9	79	70-135	

Lab Batch #: 932998 **Sample:** 650368-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/29/14 16:30

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	49.1	50.0	98	70-135	

Lab Batch #: 932998 **Sample:** 650368-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/29/14 16:55

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	60.8	50.0	122	70-135	

Lab Batch #: 932998 **Sample:** 650368-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/29/14 17:21

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	54.6	50.0	109	70-135	

Lab Batch #: 932998 **Sample:** 478237-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/29/14 20:11

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	99.8	122	70-135	
o-Terphenyl	54.2	49.9	109	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 478290 **Project ID:** SRS# 2014-014

Analyst: ARM **Date Prepared:** 01/29/2014 **Date Analyzed:** 01/29/2014

Lab Batch ID: 932998 **Sample:** 650368-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	1040	104	1000	949	95	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1020	102	1000	940	94	8	70-135	35	

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

Sample Duplicate Recovery

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 478290

Lab Batch #: 933189 **Project ID:** SRS# 2014-014

Date Analyzed: 01/31/2014 13:10 **Date Prepared:** 01/31/2014 **Analyst:** WRU

QC- Sample ID: 478237-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	13.8	15.0	8	20	

Lab Batch #: 933189

Date Analyzed: 01/31/2014 13:10 **Date Prepared:** 01/31/2014 **Analyst:** WRU

QC- Sample ID: 478298-005 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	7.35	7.84	6	20	

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

BRL - Below Reporting Limit

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 01/28/2014 04:28:00 PM

Work Order #: 478290

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)?	
#2 *Shipping container in good condition?	N/A
#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)?	Yes
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	N/A
#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: 01/29/2014

Checklist reviewed by: Kelsey Brooks Date: 01/29/2014

Analytical Report 478301

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Lea to Jal 8" Line 1 Pump

SRS# 2014-014

04-FEB-14

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-16-TX), 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)
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)

Sample Cross Reference 478301

PLAINS ALL AMERICAN EH&S, Midland, TX

Lea to Jal 8" Line 1 Pump

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Stockpile	S	01-27-14 10:00		478301-001

Certificate of Analysis Summary 478301

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Lea to Jal 8" Line 1 Pump

Project Id: SRS# 2014-014
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Tue Jan-28-14 04:23 pm
Report Date: 04-FEB-14
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	478301-001					
	Field Id:	Stockpile					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Jan-27-14 10:00					
Inorganic Anions by EPA 300/300.1	*Extracted:*	Jan-30-14 10:00					
	Analyzed:	Jan-30-14 19:47					
	Units/RL:	mg/kg	RL				
Chloride		9.47	2.13				
Paint Filter Liquids Test by SW-9095	*Extracted:*						
	Analyzed:	Feb-03-14 11:15					
	Units/RL:						
Paint Filter		Pass	1.0				
Percent Moisture	*Extracted:*						
	Analyzed:	Jan-31-14 13:10					
	Units/RL:	%	RL				
Percent Moisture		6.12	1.00				

Kelsey Brooks
Project Manager

XENCO Laboratories

BS / BSD Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 478301 **Project ID:** SRS# 2014-014

Analyst: AMB **Date Prepared:** 01/30/2014 **Date Analyzed:** 01/30/2014

Lab Batch ID: 933037 **Sample:** 650379-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

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	<2.00	50.0	47.1	94	50.0	47.4	95	1	80-120	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

Sample Duplicate Recovery

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 478301

Lab Batch #: 933189 **Project ID:** SRS# 2014-014

Date Analyzed: 01/31/2014 13:10 **Date Prepared:** 01/31/2014 **Analyst:** WRU

QC- Sample ID: 478237-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	13.8	15.0	8	20	

Lab Batch #: 933189

Date Analyzed: 01/31/2014 13:10 **Date Prepared:** 01/31/2014 **Analyst:** WRU

QC- Sample ID: 478298-005 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	7.35	7.84	6	20	

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

BRL - Below Reporting Limit

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 01/28/2014 04:23:00 PM

Work Order #: 478301

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)?	4.5
#2 *Shipping container in good condition?	N/A
#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)?	Yes
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	N/A
#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: 01/29/2014

Checklist reviewed by: Kelsey Brooks Date: 01/29/2014

Analytical Report 479262

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Lea to Jal 8" Line 1 Pump

SRS #2014-014

28-FEB-14

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-16-TX), 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)
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)

Sample Cross Reference 479262

PLAINS ALL AMERICAN EH&S, Midland, TX

Lea to Jal 8" Line 1 Pump

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Floor #1	S	02-12-14 10:00		479262-001
Floor #2	S	02-12-14 10:05		479262-002
N Wall	S	02-12-14 10:10		479262-003
S Wall	S	02-12-14 10:15		479262-004
E Wall #1	S	02-12-14 10:20		479262-005
E Wall #2	S	02-12-14 10:25		479262-006
W Wall #1	S	02-12-14 10:30		479262-007
W Wall #2	S	02-12-14 10:35		479262-008
Flowpath Floor #1	S	02-12-14 10:40		479262-009
Flowpath Floor #2	S	02-12-14 10:45		479262-010
Flowpath N Wall	S	02-12-14 10:50		479262-011
Flowpath S Wall	S	02-12-14 10:55		479262-012
Runoff Area Floor	S	02-12-14 11:00		479262-013
Runoff Area NW. Wall	S	02-12-14 11:05		479262-014
Runoff Area S Wall	S	02-12-14 11:10		479262-015
Pooling Area Floor	S	02-12-14 11:15		479262-016
Pooling Area E Wall	S	02-12-14 11:20		479262-017
Pooling Area W Wall	S	02-12-14 11:25		479262-018

Certificate of Analysis Summary 479262

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Lea to Jal 8" Line 1 Pump

Project Id: SRS #2014-014
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Wed Feb-12-14 03:30 pm
Report Date: 28-FEB-14
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	479262-001		479262-002		479262-003		479262-004		479262-005		479262-006	
	Field Id:	Floor #1		Floor #2		N Wall		S Wall		E Wall #1		E Wall #2	
	Depth:												
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	Sampled:	Feb-12-14 10:00		Feb-12-14 10:05		Feb-12-14 10:10		Feb-12-14 10:15		Feb-12-14 10:20		Feb-12-14 10:25	
BTEX by EPA 8021B	*Extracted:*	Feb-26-14 08:00		Feb-20-14 17:00		Feb-20-14 17:00		Feb-26-14 08:00		Feb-26-14 08:00		Feb-26-14 08:00	
	Analyzed:	Feb-26-14 20:36		Feb-21-14 15:11		Feb-21-14 15:27		Feb-26-14 20:53		Feb-26-14 21:09		Feb-26-14 21:25	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00108	ND	0.00111	ND	0.00116	ND	0.00104	ND	0.00102	ND	0.00101
Toluene		ND	0.00216	ND	0.00223	ND	0.00232	ND	0.00207	ND	0.00204	ND	0.00202
Ethylbenzene		ND	0.00108	ND	0.00111	ND	0.00116	ND	0.00104	ND	0.00102	ND	0.00101
m_p-Xylenes		ND	0.00216	ND	0.00223	ND	0.00232	ND	0.00207	ND	0.00204	ND	0.00202
o-Xylene		ND	0.00108	ND	0.00111	ND	0.00116	ND	0.00104	ND	0.00102	ND	0.00101
Total Xylenes		ND	0.00108	ND	0.00111	ND	0.00116	ND	0.00104	ND	0.00102	ND	0.00101
Total BTEX		ND	0.00108	ND	0.00111	ND	0.00116	ND	0.00104	ND	0.00102	ND	0.00101
Inorganic Anions by EPA 300/300.1	*Extracted:*	Feb-17-14 10:00		Feb-17-14 10:00		Feb-17-14 10:00		Feb-17-14 10:00		Feb-17-14 10:00		Feb-17-14 10:00	
	Analyzed:	Feb-17-14 16:29		Feb-17-14 17:15		Feb-17-14 17:37		Feb-17-14 18:00		Feb-17-14 18:23		Feb-17-14 18:45	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3.22	2.17	3.34	2.23	4.93	2.33	3.43	2.08	3.09	2.04	3.15	2.03
Percent Moisture	*Extracted:*												
	Analyzed:	Feb-17-14 10:50		Feb-17-14 10:50		Feb-17-14 10:50		Feb-17-14 10:50		Feb-17-14 10:50		Feb-17-14 10:50	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		7.96	1.00	10.5	1.00	14.1	1.00	3.64	1.00	1.95	1.00	1.51	1.00
TPH By SW8015 Mod	*Extracted:*	Feb-14-14 17:00		Feb-14-14 17:00		Feb-14-14 17:00		Feb-14-14 17:00		Feb-14-14 17:00		Feb-14-14 17:00	
	Analyzed:	Feb-16-14 00:43		Feb-16-14 01:08		Feb-16-14 01:34		Feb-16-14 01:59		Feb-16-14 02:25		Feb-16-14 02:50	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	16.3	ND	16.7	ND	17.4	ND	15.6	ND	15.3	ND	15.2
C12-C28 Diesel Range Hydrocarbons		115	16.3	21.6	16.7	ND	17.4	105	15.6	313	15.3	98.3	15.2
C28-C35 Oil Range Hydrocarbons		20.9	16.3	ND	16.7	ND	17.4	ND	15.6	62.9	15.3	23.5	15.2
Total TPH		136	16.3	21.6	16.7	ND	17.4	105	15.6	376	15.3	122	15.2

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 479262

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Lea to Jal 8" Line 1 Pump

Project Id: SRS #2014-014
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Wed Feb-12-14 03:30 pm
Report Date: 28-FEB-14
Project Manager: Kelsey Brooks

Analysis Requested																			
	Lab Id:	479262-013				479262-014				479262-015				479262-016				479262-017				479262-018			
	Field Id:	Runoff Area Floor				Runoff Area NW. Wall				Runoff Area S Wall				Pooling Area Floor				Pooling Area E Wall				Pooling Area W Wall			
	Depth:																								
	Matrix:	SOLID				SOLID				SOLID				SOLID				SOLID				SOLID			
	Sampled:	Feb-12-14 11:00				Feb-12-14 11:05				Feb-12-14 11:10				Feb-12-14 11:15				Feb-12-14 11:20				Feb-12-14 11:25			
BTEX by EPA 8021B	*Extracted:*	Feb-20-14 17:00				Feb-20-14 17:00				Feb-20-14 17:00				Feb-20-14 17:00				Feb-20-14 17:00				Feb-20-14 17:00			
	Analyzed:	Feb-21-14 17:59				Feb-21-14 18:15				Feb-21-14 18:31				Feb-21-14 18:47				Feb-22-14 14:12				Feb-22-14 14:28			
	Units/RL:	mg/kg	RL			mg/kg	RL			mg/kg	RL			mg/kg	RL			mg/kg	RL			mg/kg	RL		
Benzene		ND	0.00127			ND	0.00105			ND	0.00114			ND	0.00118			ND	0.00117			ND	0.00115		
Toluene		ND	0.00255			ND	0.00210			ND	0.00227			ND	0.00236			ND	0.00234			ND	0.00231		
Ethylbenzene		ND	0.00127			ND	0.00105			ND	0.00114			ND	0.00118			ND	0.00117			ND	0.00115		
m_p-Xylenes		ND	0.00255			ND	0.00210			ND	0.00227			ND	0.00236			ND	0.00234			ND	0.00231		
o-Xylene		ND	0.00127			ND	0.00105			ND	0.00114			ND	0.00118			ND	0.00117			ND	0.00115		
Total Xylenes		ND	0.00127			ND	0.00105			ND	0.00114			ND	0.00118			ND	0.00117			ND	0.00115		
Total BTEX		ND	0.00127			ND	0.00105			ND	0.00114			ND	0.00118			ND	0.00117			ND	0.00115		
Inorganic Anions by EPA 300/300.1	*Extracted:*	Feb-17-14 10:00				Feb-17-14 10:00				Feb-17-14 10:00				Feb-17-14 10:00				Feb-17-14 10:00				Feb-17-14 10:00			
	Analyzed:	Feb-17-14 22:32				Feb-17-14 22:54				Feb-17-14 23:17				Feb-18-14 00:25				Feb-18-14 00:48				Feb-18-14 01:10			
	Units/RL:	mg/kg	RL			mg/kg	RL			mg/kg	RL			mg/kg	RL			mg/kg	RL			mg/kg	RL		
Chloride		3.64	2.56			3.72	2.12			4.30	2.28			3.47	2.37			3.75	2.34			4.06	2.31		
Percent Moisture	*Extracted:*																								
	Analyzed:	Feb-17-14 10:50				Feb-17-14 10:50				Feb-17-14 10:50				Feb-17-14 10:50				Feb-17-14 10:50				Feb-17-14 10:50			
	Units/RL:	%	RL			%	RL			%	RL			%	RL			%	RL			%	RL		
Percent Moisture		21.9	1.00			5.54	1.00			12.3	1.00			15.6	1.00			14.6	1.00			13.4	1.00		
TPH By SW8015 Mod	*Extracted:*	Feb-14-14 17:00				Feb-14-14 17:00				Feb-14-14 17:00				Feb-14-14 17:00				Feb-14-14 17:00				Feb-14-14 17:00			
	Analyzed:	Feb-16-14 06:36				Feb-16-14 07:01				Feb-16-14 07:25				Feb-16-14 07:50				Feb-16-14 08:15				Feb-16-14 09:34			
	Units/RL:	mg/kg	RL			mg/kg	RL			mg/kg	RL			mg/kg	RL			mg/kg	RL			mg/kg	RL		
C6-C12 Gasoline Range Hydrocarbons		ND	19.1			ND	15.8			ND	17.1			ND	17.7			ND	17.5			ND	17.3		
C12-C28 Diesel Range Hydrocarbons		ND	19.1			ND	15.8			ND	17.1			ND	17.7			ND	17.5			ND	17.3		
C28-C35 Oil Range Hydrocarbons		ND	19.1			ND	15.8			ND	17.1			ND	17.7			ND	17.5			ND	17.3		
Total TPH		ND	19.1			ND	15.8			ND	17.1			ND	17.7			ND	17.5			ND	17.3		

Kelsey Brooks
Project Manager

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 479262,

Project ID: SRS #2014-014

Lab Batch #: 934204 **Sample:** 479262-001 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 00:43

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.8	118	70-135	
o-Terphenyl	62.1	49.9	124	70-135	

Lab Batch #: 934204 **Sample:** 479262-002 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 01:08

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.1	99.8	96	70-135	
o-Terphenyl	50.9	49.9	102	70-135	

Lab Batch #: 934204 **Sample:** 479262-003 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 01:34

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.4	99.6	93	70-135	
o-Terphenyl	48.5	49.8	97	70-135	

Lab Batch #: 934204 **Sample:** 479262-004 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 01:59

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.9	104	70-135	
o-Terphenyl	54.1	50.0	108	70-135	

Lab Batch #: 934204 **Sample:** 479262-005 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 02:25

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.6	99.7	91	70-135	
o-Terphenyl	45.0	49.9	90	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 479262,

Project ID: SRS #2014-014

Lab Batch #: 934204 **Sample:** 479262-011 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 05:46

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	56.8	50.0	114	70-135	

Lab Batch #: 934204 **Sample:** 479262-012 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 06:11

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	99.6	120	70-135	
o-Terphenyl	61.3	49.8	123	70-135	

Lab Batch #: 934204 **Sample:** 479262-013 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 06:36

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.0	99.7	94	70-135	
o-Terphenyl	48.9	49.9	98	70-135	

Lab Batch #: 934204 **Sample:** 479262-014 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 07:01

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.6	99.8	93	70-135	
o-Terphenyl	47.6	49.9	95	70-135	

Lab Batch #: 934204 **Sample:** 479262-015 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 07:25

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.8	99.8	97	70-135	
o-Terphenyl	50.7	49.9	102	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 479262,

Project ID: SRS #2014-014

Lab Batch #: 934572 **Sample:** 479262-007 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/21/14 17:11

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 934572 **Sample:** 479262-008 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/21/14 17:27

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
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	0.0284	0.0300	95	80-120	

Lab Batch #: 934572 **Sample:** 479262-012 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/21/14 17:43

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	

Lab Batch #: 934572 **Sample:** 479262-013 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/21/14 17:59

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
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	0.0265	0.0300	88	80-120	

Lab Batch #: 934572 **Sample:** 479262-014 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/21/14 18:15

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 479262,

Project ID: SRS #2014-014

Lab Batch #: 935044 **Sample:** 479262-004 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/26/14 20:53

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0242	0.0300	81	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 935044 **Sample:** 479262-005 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/26/14 21:09

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 935044 **Sample:** 479262-006 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/26/14 21:25

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 935044 **Sample:** 479262-009 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/26/14 21:41

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	

Lab Batch #: 935044 **Sample:** 479262-010 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/26/14 21:57

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 479262,

Project ID: SRS #2014-014

Lab Batch #: 934572 **Sample:** 651408-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/21/14 11:44

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 935044 **Sample:** 651698-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/26/14 19:17

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

Lab Batch #: 934204 **Sample:** 651159-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 00:17

TPH By SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.5	100	94	70-135	
o-Terphenyl	55.7	50.0	111	70-135	

Lab Batch #: 934572 **Sample:** 651408-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/21/14 11:28

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0320	0.0300	107	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 935044 **Sample:** 651698-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/26/14 19:33

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0327	0.0300	109	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

BS / BSD Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 479262 **Project ID:** SRS #2014-014

Analyst: ARM **Date Prepared:** 02/20/2014 **Date Analyzed:** 02/21/2014

Lab Batch ID: 934572 **Sample:** 651408-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

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	0.108	108	0.100	0.109	109	1	70-130	35	
Toluene	<0.00200	0.100	0.108	108	0.100	0.109	109	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.106	106	0.100	0.107	107	1	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.207	104	0.200	0.210	105	1	70-135	35	
o-Xylene	<0.00100	0.100	0.108	108	0.100	0.109	109	1	71-133	35	

Analyst: ARM **Date Prepared:** 02/26/2014 **Date Analyzed:** 02/26/2014

Lab Batch ID: 935044 **Sample:** 651698-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

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	0.0957	96	0.100	0.0982	98	3	70-130	35	
Toluene	<0.00200	0.100	0.0956	96	0.100	0.0980	98	2	70-130	35	
Ethylbenzene	<0.00100	0.100	0.101	101	0.100	0.103	103	2	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.208	104	0.200	0.213	107	2	70-135	35	
o-Xylene	<0.00100	0.100	0.105	105	0.100	0.108	108	3	71-133	35	

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

XENCO Laboratories

Form 3 - MS Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 479262

Lab Batch #: 934572 **Project ID:** SRS #2014-014

Date Analyzed: 02/21/2014 **Date Prepared:** 02/20/2014 **Analyst:** ARM

QC- Sample ID: 479265-005 S **Batch #:** 1 **Matrix:** Solid

Reporting Units: mg/kg

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	<0.00115	0.115	0.0569	49	70-130	X
Toluene	<0.00231	0.115	0.0551	48	70-130	X
Ethylbenzene	<0.00115	0.115	0.0474	41	71-129	X
m_p-Xylenes	<0.00231	0.231	0.0984	43	70-135	X
o-Xylene	<0.00115	0.115	0.0491	43	71-133	X

Lab Batch #: 934251

Date Analyzed: 02/17/2014 **Date Prepared:** 02/17/2014 **Analyst:** AMB

QC- Sample ID: 479262-001 S **Batch #:** 1 **Matrix:** Solid

Reporting Units: mg/kg

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	3.22	54.3	55.0	95	80-120	

Lab Batch #: 934251

Date Analyzed: 02/17/2014 **Date Prepared:** 02/17/2014 **Analyst:** AMB

QC- Sample ID: 479262-011 S **Batch #:** 1 **Matrix:** Solid

Reporting Units: mg/kg

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	4.27	51.1	51.9	93	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

Sample Duplicate Recovery

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 479262

Lab Batch #: 934151 **Project ID:** SRS #2014-014

Date Analyzed: 02/17/2014 10:50 **Date Prepared:** 02/17/2014 **Analyst:** WRU

QC- Sample ID: 479262-001 D **Batch #:** 1 **Matrix:** Solid

Reporting Units: %

	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	7.96	8.90	11	20	

Lab Batch #: 934151

Date Analyzed: 02/17/2014 10:50 **Date Prepared:** 02/17/2014 **Analyst:** WRU

QC- Sample ID: 479262-011 D **Batch #:** 1 **Matrix:** Solid

Reporting Units: %

	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	2.17	2.17	0	20	

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

BRL - Below Reporting Limit

CHAIN OF CUSTODY RECORD

XENCO Laboratories — Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 12600 West I-20 East Odessa, TX 79765 (432)563-1800

Page 2 of 2

LAB W.O#: _____

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:	bjarguijo@basinenv.com
Project ID:	Lea to Jal 8" Line 1 Pump SRS #2014-014	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 Signature:

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**	Example Volatiles by 8260	TPH	Chloride								Hold Sample (CALL) on Highest TPH Run PAH Only if
								# Cont	Lab Only:											
1	Flowpath N. Wall	2/12/14	1050	S			1			X	X	X								
2	Flowpath S. Wall		1055																	
3	Run off area Release Point Floor		1100																	
4	Run off area Release Point N. Wall		1105																	
5	Run off Area Release Point S. Wall		1110																	
6	Pooling Area Floor		1115																	
7	Pooling Area E. Wall		1120																	
8	Pooling Area W. Wall		1125																	
9																				
10																				

REMARKS

Run BTEX if TPH <= 100

Sample name changed 2/26/14 MB - Bf Email

* 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 _____

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	2.2 5.3

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1		BasinEnv.	2/12/14	1530	Perla Rescendez	MV	2-12-14	15:30
2						Xenco	2-13-14	14:30
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?	✓		

C.O.C. Serial #

Analytical Report 480287

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Lea to Jal 8" Line 1 Pump

SRS# 2014-014

03-MAR-14

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-16-TX), 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)
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)

Sample Cross Reference 480287

PLAINS ALL AMERICAN EH&S, Midland, TX

Lea to Jal 8" Line 1 Pump

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Release Point Floor	S	02-26-14 16:10		480287-001

Certificate of Analysis Summary 480287

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Lea to Jal 8" Line 1 Pump

Project Id: SRS# 2014-014
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Thu Feb-27-14 11:45 am
Report Date: 03-MAR-14
Project Manager: Kelsey Brooks

Analysis Requested								
	Lab Id:	480287-001						
	Field Id:	Release Point Floor						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Feb-26-14 16:10						
TPH By SW8015 Mod	*Extracted:*	Mar-03-14 07:00						
	Analyzed:	Mar-03-14 13:39						
	Units/RL:	mg/kg	RL					
C6-C12 Gasoline Range Hydrocarbons		ND	18.4					
C12-C28 Diesel Range Hydrocarbons		22.6	18.4					
C28-C35 Oil Range Hydrocarbons		ND	18.4					
Total TPH		22.6	18.4					

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 480287,

Project ID: SRS# 2014-014

Lab Batch #: 935290 **Sample:** 651853-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/03/14 09:52

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.3	100	96	70-135	
o-Terphenyl	46.6	50.0	93	70-135	

Lab Batch #: 935252 **Sample:** 651837-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/28/14 13:06

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 935290 **Sample:** 651853-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/03/14 10:28

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	57.2	50.0	114	70-135	

Lab Batch #: 935252 **Sample:** 479940-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/28/14 13:22

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 935290 **Sample:** 480287-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/03/14 14:05

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	60.7	50.0	121	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

BS / BSD Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 480287 **Project ID:** SRS# 2014-014

Analyst: ARM **Date Prepared:** 02/28/2014 **Date Analyzed:** 02/28/2014

Lab Batch ID: 935252 **Sample:** 651837-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

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	0.0946	95	0.100	0.0951	95	1	70-130	35	
Toluene	<0.00200	0.100	0.0938	94	0.100	0.0947	95	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0997	100	0.100	0.100	100	0	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.206	103	0.200	0.208	104	1	70-135	35	
o-Xylene	<0.00100	0.100	0.103	103	0.100	0.104	104	1	71-133	35	

Analyst: AMB **Date Prepared:** 02/28/2014 **Date Analyzed:** 02/28/2014

Lab Batch ID: 935265 **Sample:** 651751-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

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	<2.00	50.0	45.8	92	50.0	46.9	94	2	80-120	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: Lea to Jal 8" Line 1 Pump

Work Order #: 480287

Lab Batch #: 935265 **Project ID:** SRS# 2014-014

Date Analyzed: 02/28/2014 **Date Prepared:** 02/28/2014 **Analyst:** AMB

QC- Sample ID: 480134-003 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

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	3.53	57.1	54.9	90	80-120	

Lab Batch #: 935265

Date Analyzed: 02/28/2014 **Date Prepared:** 02/28/2014 **Analyst:** AMB

QC- Sample ID: 480223-001 S **Batch #:** 1 **Matrix:** Solid

Reporting Units: mg/kg

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	87.9	265	379	110	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

Sample Duplicate Recovery

Project Name: Lea to Jal 8" Line 1 Pump

Work Order # 480287

Lab Batch #: 935240 **Project ID:** SRS# 2014-014

Date Analyzed: 03/03/2014 09:50 **Date Prepared:** 03/03/2014 **Analyst:** WRU

QC- Sample ID: 480223-001 D **Batch #:** 1 **Matrix:** Solid

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	5.62	6.55	15	20	

Lab Batch #: 935240

Date Analyzed: 03/03/2014 09:50 **Date Prepared:** 03/03/2014 **Analyst:** WRU

QC- Sample ID: 480308-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	21.0	19.8	6	20	

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

BRL - Below Reporting Limit

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 02/27/2014 11:45:00 AM

Work Order #: 480287

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)?	
#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?	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)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	N/A
#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: 02/28/2014

Checklist reviewed by: Kelsey Brooks Date: 02/28/2014

Analytical Report 484611

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Lea to Jal 8" Line 1 Pump

SRS #2014-014

09-MAY-14

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-16-TX), 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)
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)

Sample Cross Reference 484611

PLAINS ALL AMERICAN EH&S, Midland, TX

Lea to Jal 8" Line 1 Pump

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
E. Wall #2b	S	05-01-14 11:00		484611-002
S. Wall b	S	05-01-14 11:30		484611-004

Certificate of Analysis Summary 484611

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Lea to Jal 8" Line 1 Pump

Project Id: SRS #2014-014
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Sat May-03-14 02:00 pm
Report Date: 09-MAY-14
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	484611-002		484611-004					
	Field Id:	E. Wall #2b		S. Wall b					
	Depth:								
	Matrix:	SOIL		SOIL					
	Sampled:	May-01-14 11:00		May-01-14 11:30					
BTEX by EPA 8021B	*Extracted:*	May-05-14 14:30		May-05-14 14:30					
	Analyzed:	May-05-14 14:48		May-05-14 15:05					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		ND	0.00116	ND	0.00116				
Toluene		ND	0.00232	ND	0.00232				
Ethylbenzene		ND	0.00116	ND	0.00116				
m,p-Xylenes		ND	0.00232	ND	0.00232				
o-Xylene		ND	0.00116	ND	0.00116				
Total Xylenes		ND	0.00116	ND	0.00116				
Total BTEX		ND	0.00116	ND	0.00116				
Inorganic Anions by EPA 300/300.1	*Extracted:*	May-07-14 19:00		May-07-14 19:00					
	Analyzed:	May-08-14 15:21		May-08-14 15:44					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		4.28	2.33	4.23	2.33				
Percent Moisture	*Extracted:*								
	Analyzed:	May-06-14 12:05		May-06-14 12:05					
	Units/RL:	%	RL	%	RL				
Percent Moisture		14.1	1.00	14.0	1.00				
TPH By SW8015 Mod	*Extracted:*	May-05-14 14:30		May-05-14 14:30					
	Analyzed:	May-05-14 16:24		May-05-14 17:13					
	Units/RL:	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		ND	17.4	ND	17.4				
C12-C28 Diesel Range Hydrocarbons		ND	17.4	ND	17.4				
C28-C35 Oil Range Hydrocarbons		ND	17.4	ND	17.4				
Total TPH		ND	17.4	ND	17.4				

Kelsey Brooks
Project Manager

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 484611,

Project ID: SRS #2014-014

Lab Batch #: 940111 **Sample:** 484611-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/05/14 14:48

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 940111 **Sample:** 484611-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/05/14 15:05

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0248	0.0300	83	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 940137 **Sample:** 484611-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/05/14 16:24

TPH By SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.9	103	70-135	
o-Terphenyl	48.0	50.0	96	70-135	

Lab Batch #: 940137 **Sample:** 484611-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/05/14 17:13

TPH By SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.9	104	70-135	
o-Terphenyl	48.8	50.0	98	70-135	

Lab Batch #: 940111 **Sample:** 654955-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/05/14 12:02

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 484611,

Project ID: SRS #2014-014

Lab Batch #: 940111 **Sample:** 484293-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/05/14 12:52

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	

Lab Batch #: 940137 **Sample:** 484611-004 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/05/14 18:00

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	99.9	120	70-135	
o-Terphenyl	62.8	50.0	126	70-135	

Lab Batch #: 940111 **Sample:** 484293-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/05/14 13:08

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0346	0.0300	115	80-120	

Lab Batch #: 940137 **Sample:** 484611-004 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/05/14 18:24

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.8	110	70-135	
o-Terphenyl	58.1	49.9	116	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 484611 **Project ID:** SRS #2014-014

Analyst: ARM **Date Prepared:** 05/05/2014 **Date Analyzed:** 05/05/2014

Lab Batch ID: 940137 **Sample:** 654969-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	879	88	1000	1040	104	17	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	897	90	1000	1050	105	16	70-135	35	

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

Form 3 - MS / MSD Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order # : 484611 **Project ID:** SRS #2014-014

Lab Batch ID: 940111 **QC- Sample ID:** 484293-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/05/2014 **Date Prepared:** 05/05/2014 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00139	0.139	0.133	96	0.139	0.130	94	2	70-130	35	
Toluene	<0.00278	0.139	0.134	96	0.139	0.131	94	2	70-130	35	
Ethylbenzene	<0.00139	0.139	0.143	103	0.139	0.140	101	2	71-129	35	
m,p-Xylenes	<0.00278	0.278	0.296	106	0.278	0.289	104	2	70-135	35	
o-Xylene	<0.00139	0.139	0.147	106	0.139	0.144	104	2	71-133	35	

Lab Batch ID: 940137 **QC- Sample ID:** 484611-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/05/2014 **Date Prepared:** 05/05/2014 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<17.4	1160	1130	97	1160	1020	88	10	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<17.4	1160	1240	107	1160	1100	95	12	70-135	35	

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

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

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

CHAIN OF CUSTODY RECORD

XENCO Laboratories
Environmental Asbestos Radioactivity

Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 12600 West I-20 East Odessa, TX 79765 (432)563-1800
:roool-c

Page 1 of 1

LAB W.O # : 484611

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:	bjarguijo@basinenv.com
Project ID:	Lea to Jal 8" Line 1 Pump SRS #2014-014	PO#:	PAA-C Bryant
Invoice To:	Camille Bryant Plains All American	Quote #:	

Sampler Signature:

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**	Example Volatiles by 8260	GC TPH	GC BTEX	GC Chloride							Hold Sample (CALL) Run PAH on Highest TPH Only if
								# Cont	Lab Only	Lab Only:										
~~1~~	~~E. Wall #1b~~	~~5/1/2014~~	~~1120~~	~~S~~			~~1~~				~~X~~	~~X~~	~~X~~							
2	E. Wall #2b	5/1/2014	1100	S			1				X	X	X							
~~3~~	~~Floor #1b~~	~~5/1/2014~~	~~1125~~	~~S~~			~~1~~				~~X~~	~~X~~	~~X~~							
4	S. Wall b	5/1/2014	1130	S			1				X	X	X							
5																				
6																				
7																				
8																				
9																				
0																				

* 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
H_2SO_4	G. $Na_2S_2O_3$	K. ZnAc&NaOH
D. NaOH	H. $NaHSO_4$	L. Asbc Acid&NaOH

C.

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

Samples 1 & 3 Cancelled per Ben Arguijo

MB

Reg. Program / Clean-up Std	STATE for Certs & Regs	QA/QC Level & Certification	EDDs	COC & Labels	Coolers Temp °C	Lab Use Only	YES	NO	N/A
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 5C2 JM 3 11-20	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?			

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1		Basin	5-2-14	8:55	PortaRosario	MS	5-2-14	8:55
2					Julian M	Xenco	5-3-14	14:00
3								
4								

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

Analytical Report 485087

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Lea to Jal 8" Line 1 Pump

SRS #2014-014

16-MAY-14

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-16-TX), 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)
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)

XENCO Laboratories

Sample Cross Reference 485087

PLAINS ALL AMERICAN EH&S, Midland, TX

Lea to Jal 8" Line 1 Pump

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
E. Wall #1b	S	05-07-14 16:40		485087-002
Floor #1b	S	05-07-14 16:45		485087-004

Certificate of Analysis Summary 485087

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Lea to Jal 8" Line 1 Pump

Project Id: SRS #2014-014
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Fri May-09-14 03:30 pm
Report Date: 16-MAY-14
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	485087-002		485087-004					
	Field Id:	E. Wall #1b		Floor #1b					
	Depth:								
	Matrix:	SOIL		SOIL					
	Sampled:	May-07-14 16:40		May-07-14 16:45					
BTEX by EPA 8021B	*Extracted:*	May-14-14 17:00		May-14-14 17:00					
	Analyzed:	May-15-14 08:00		May-15-14 08:17					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		ND	0.00126	ND	0.00128				
Toluene		ND	0.00253	ND	0.00256				
Ethylbenzene		ND	0.00126	ND	0.00128				
m,p-Xylenes		ND	0.00253	ND	0.00256				
o-Xylene		ND	0.00126	ND	0.00128				
Total Xylenes		ND	0.00126	ND	0.00128				
Total BTEX		ND	0.00126	ND	0.00128				
Inorganic Anions by EPA 300/300.1 SUB: E871002	*Extracted:*	May-14-14 15:04		May-14-14 15:04					
	Analyzed:	May-15-14 11:34		May-15-14 11:55					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		ND	2.53	ND	2.56				
Percent Moisture	*Extracted:*								
	Analyzed:	May-14-14 12:45		May-14-14 12:45					
	Units/RL:	%	RL	%	RL				
Percent Moisture		21.0	1.00	21.9	1.00				
TPH By SW8015 Mod	*Extracted:*	May-12-14 17:00		May-12-14 17:00					
	Analyzed:	May-13-14 22:13		May-14-14 09:19					
	Units/RL:	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		ND	18.9	23.7	19.2				
C12-C28 Diesel Range Hydrocarbons		ND	18.9	66.4	19.2				
C28-C35 Oil Range Hydrocarbons		ND	18.9	ND	19.2				
Total TPH		ND	18.9	90.1	19.2				

Kelsey Brooks
Project Manager

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 485087,

Project ID: SRS #2014-014

Lab Batch #: 940764 **Sample:** 485087-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/13/14 22:13

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.8	112	70-135	
o-Terphenyl	59.9	49.9	120	70-135	

Lab Batch #: 940764 **Sample:** 485087-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/14/14 09:19

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	99.9	130	70-135	
o-Terphenyl	62.9	50.0	126	70-135	

Lab Batch #: 941010 **Sample:** 485087-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/15/14 08:00

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0257	0.0300	86	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 941010 **Sample:** 485087-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/15/14 08:17

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 940764 **Sample:** 655345-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/13/14 07:35

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.4	100	95	70-135	
o-Terphenyl	50.6	50.0	101	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 485087,

Project ID: SRS #2014-014

Lab Batch #: 940764 **Sample:** 485145-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/13/14 09:15

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.8	124	70-135	
o-Terphenyl	46.7	49.9	94	70-135	

Lab Batch #: 941010 **Sample:** 484890-008 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/15/14 05:15

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0337	0.0300	112	80-120	

Lab Batch #: 940764 **Sample:** 485145-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/13/14 09:41

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.7	110	70-135	
o-Terphenyl	44.0	49.9	88	70-135	

Lab Batch #: 941010 **Sample:** 484890-008 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/15/14 05:32

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0335	0.0300	112	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: Lea to Jal 8" Line 1 Pump

Work Order #: 485087 **Project ID:** SRS #2014-014

Analyst: ARM **Date Prepared:** 05/14/2014 **Date Analyzed:** 05/15/2014

Lab Batch ID: 941010 **Sample:** 655495-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

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	0.0949	95	8	70-130	35	
Toluene	<0.00200	0.100	0.102	102	0.100	0.0940	94	8	70-130	35	
Ethylbenzene	<0.00100	0.100	0.108	108	0.100	0.0993	99	8	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.221	111	0.200	0.203	102	8	70-135	35	
o-Xylene	<0.00100	0.100	0.112	112	0.100	0.104	104	7	71-133	35	

Analyst: ARM **Date Prepared:** 05/12/2014 **Date Analyzed:** 05/13/2014

Lab Batch ID: 940764 **Sample:** 655345-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	1060	106	1000	959	96	10	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1100	110	1000	1030	103	7	70-135	35	

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

Form 3 - MS / MSD Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order # : 485087 **Project ID:** SRS #2014-014

Lab Batch ID: 940764 **QC- Sample ID:** 485145-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/13/2014 **Date Prepared:** 05/12/2014 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	998	927	93	997	918	92	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	57.6	998	997	94	997	959	90	4	70-135	35	

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

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

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

CHAIN OF CUSTODY RECORD

XENCO Laboratories Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 12600 West I-20 East Odessa, TX 79765 (432)563-1800 ;roool-c

Page 1 of 1

LAB W.O # : 418087

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:	bjarguijo@basinenv.com
Project ID:	Lea to Jal 8" Line 1 Pump SRS #2014-014	PO#:	PAA-C. Bryant
Invoice To:	Camille Bryant Plains All American	Quote #:	
Sampler Signature:	Bobby K Blakemore	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

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Cont Type * VC	Example Volatiles by 8260	TPH	BTEX	Chloride								Hold Sample (CALL___) Run PAH on Highest TPH___ Only if
								Pres Type**												
								# Cont	Lab Only	Lab Only:										
1	E. Wall #1b	5/7/2014	440	S			1			X	X	X								
2	Floor #1b	5/7/2014	445	S			1			X	X	X								
3																				
4																				
5																				
6																				
7																				
8																				
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, 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, S Soil/Sediment/Solid, W Wipe, A Air, O Oil, T Tissue, U Urine, B Blood, 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	17.0 2°C 3

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	Bobby K Blakemore	Basin	5-8-14	09:43	V. Cisneros	MS	5-8-14	09:43
2					Mironakios	Xenco	5/9/14	15:30
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 HT's?			

C.O.C. Serial #

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 05/09/2014 03:30:00 PM

Work Order #: 485087

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)?	7
#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)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	N/A
#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: 05/09/2014

Checklist reviewed by: Date:

XENCO Laboratories

Sample Duplicate Recovery

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 485087

Lab Batch #: 940896 **Project ID:** SRS #2014-014

Date Analyzed: 05/14/2014 12:45 **Date Prepared:** 05/14/2014 **Analyst:** WRU

QC- Sample ID: 484890-002 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	18.4	19.0	3	20	

Lab Batch #: 940896

Date Analyzed: 05/14/2014 12:45 **Date Prepared:** 05/14/2014 **Analyst:** WRU

QC- Sample ID: 484957-003 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	9.83	10.6	8	20	

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

Form 3 - MS / MSD Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order # : 485087 **Project ID:** SRS #2014-014

Lab Batch ID: 941010 **QC- Sample ID:** 484890-008 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/15/2014 **Date Prepared:** 05/14/2014 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00110	0.110	0.0966	88	0.111	0.0983	89	2	70-130	35	
Toluene	<0.00220	0.110	0.0966	88	0.111	0.0981	88	2	70-130	35	
Ethylbenzene	<0.00110	0.110	0.102	93	0.111	0.104	94	2	71-129	35	
m,p-Xylenes	<0.00220	0.220	0.210	95	0.221	0.213	96	1	70-135	35	
o-Xylene	<0.00110	0.110	0.104	95	0.111	0.105	95	1	71-133	35	

Lab Batch ID: 941001 **QC- Sample ID:** 484882-020 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/15/2014 **Date Prepared:** 05/14/2014 **Analyst:** DEP

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	1050	817	1870	100	817	1850	98	1	80-120	20	

Lab Batch ID: 941001 **QC- Sample ID:** 485059-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/15/2014 **Date Prepared:** 05/14/2014 **Analyst:** DEP

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	1480	2050	3440	96	2050	3500	99	2	80-120	20	

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

Blank Spike Recovery

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 485087 **Project ID:** SRS #2014-014

Lab Batch #: 941001 **Sample:** 655484-1-BKS **Matrix:** Solid

Date Analyzed: 05/14/2014 **Date Prepared:** 05/14/2014 **Analyst:** DEP

Reporting Units: mg/kg **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

Inorganic Anions by EPA 300/300.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	<10.0	100	100	100	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 485087, **Project ID:** SRS #2014-014

Lab Batch #: 941010 **Sample:** 655495-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/15/14 04:26

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 940764 **Sample:** 655345-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/13/14 07:57

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	55.4	50.0	111	70-135	

Lab Batch #: 941010 **Sample:** 655495-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/15/14 04:43

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

Lab Batch #: 940764 **Sample:** 655345-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/13/14 08:23

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	100	117	70-135	
o-Terphenyl	50.8	50.0	102	70-135	

Lab Batch #: 941010 **Sample:** 655495-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/15/14 04:59

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	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.

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

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-940764 TPH By SW8015 Mod
C28-C35 Oil Range Hydrocarbons RPD between matrix spike and duplicate was outside QC limits.
Samples affected are: 485087-002, -004

16-MAY-14

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

Reference: XENCO Report No(s): **485087**
Lea to Jal 8" Line 1 Pump
Project Address: 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) 485087. 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. 485087 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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 05/03/2014 02:00:00 PM

Work Order #: 484611

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
#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?	Yes
#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)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	N/A
#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: 05/05/2014

Checklist reviewed by: Kelsey Brooks Date: 05/05/2014

XENCO Laboratories

Sample Duplicate Recovery

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 484611

Lab Batch #: 940172 **Project ID:** SRS #2014-014

Date Analyzed: 05/06/2014 12:05 **Date Prepared:** 05/06/2014 **Analyst:** WRU

QC- Sample ID: 484549-002 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	82.2	79.6	3	20	

Lab Batch #: 940172

Date Analyzed: 05/06/2014 12:05 **Date Prepared:** 05/06/2014 **Analyst:** WRU

QC- Sample ID: 484611-004 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	14.0	13.8	1	20	

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

Form 3 - MS Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 484611

Lab Batch #: 940395 **Project ID:** SRS #2014-014

Date Analyzed: 05/07/2014 **Date Prepared:** 05/07/2014 **Analyst:** JUM

QC- Sample ID: 484549-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

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	64600	46800	105000	86	80-120	

Lab Batch #: 940395

Date Analyzed: 05/08/2014 **Date Prepared:** 05/08/2014 **Analyst:** JUM

QC- Sample ID: 484858-003 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

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	189	504	697	101	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

BS / BSD Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 484611 **Project ID:** SRS #2014-014

Analyst: ARM **Date Prepared:** 05/05/2014 **Date Analyzed:** 05/05/2014

Lab Batch ID: 940111 **Sample:** 654955-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

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	0.101	101	0.100	0.102	102	1	70-130	35	
Toluene	<0.00200	0.100	0.101	101	0.100	0.102	102	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.108	108	0.100	0.110	110	2	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.223	112	0.200	0.227	114	2	70-135	35	
o-Xylene	<0.00100	0.100	0.112	112	0.100	0.114	114	2	71-133	35	

Analyst: JUM **Date Prepared:** 05/07/2014 **Date Analyzed:** 05/07/2014

Lab Batch ID: 940395 **Sample:** 655134-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

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	<2.00	50.0	49.0	98	50.0	50.2	100	2	80-120	20	

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 484611,

Project ID: SRS #2014-014

Lab Batch #: 940137 **Sample:** 654969-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/05/14 15:29

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	51.0	50.0	102	70-135	

Lab Batch #: 940111 **Sample:** 654955-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/05/14 12:18

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0348	0.0300	116	80-120	

Lab Batch #: 940137 **Sample:** 654969-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/05/14 18:47

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	54.4	50.0	109	70-135	

Lab Batch #: 940111 **Sample:** 654955-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/05/14 12:35

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0359	0.0300	120	80-120	

Lab Batch #: 940137 **Sample:** 654969-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/05/14 19:11

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	63.0	50.0	126	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

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

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

09-MAY-14

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

Reference: XENCO Report No(s): **484611**
Lea to Jal 8" Line 1 Pump
Project Address: 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) 484611. 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. 484611 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

CHAIN OF CUSTODY RECORD

XENCO Laboratories Environmental Advanced Radiochemistry

Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 12600 West I-20 East Odessa, TX 79765 (432)563-1800

Page 1 of 1

LAB W.O#: 480287

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:	bjarguijo@basinenv.com
Project ID:	Lea to Jal 8" Line 1 Pump SRS #2014-014	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 Signature:

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	Example Volatiles by 8260	TPH	BTEX	Chloride							Hold Sample (CALL__) on Highest TPH__ Run PAH Only #
								Pres Type**		I	I	I							
								# Cont		Lab Only	Lab Only:								
1	Release Point Floor	2/26/14	1610	S			1			X	X	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, Other _____

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, S Soil/Sediment/Solid, W Wipe, A Air, O Oil, T Tissue, U Urine, B Blood, Other _____

REMARKS

****RUSH****

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 5.0

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1		Basin Env.	2/27/14	1100	Jamma Arguijo	Basin Env	2/27/14	11:00
2		Basin	2/27/14	11:45	Rocky Resendez	MS	2-27-14	11:45
3								
4						Xenco	2/28/14	12:30

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 #

Form 3 - MS / MSD Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order # 480287 **Project ID:** SRS# 2014-014

Lab Batch ID: 935252 **QC- Sample ID:** 479940-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/28/2014 **Date Prepared:** 02/28/2014 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00102	0.102	0.0900	88	0.103	0.0903	88	0	70-130	35	
Toluene	<0.00205	0.102	0.0854	84	0.103	0.0864	84	1	70-130	35	
Ethylbenzene	<0.00102	0.102	0.0914	90	0.103	0.0920	89	1	71-129	35	
m_p-Xylenes	<0.00205	0.205	0.188	92	0.206	0.188	91	0	70-135	35	
o-Xylene	<0.00102	0.102	0.0971	95	0.103	0.0973	94	0	71-133	35	

Lab Batch ID: 935290 **QC- Sample ID:** 480287-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/03/2014 **Date Prepared:** 03/03/2014 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<18.4	1230	1140	93	1220	1150	94	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	22.6	1230	1250	100	1220	1230	99	2	70-135	35	

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

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

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

BS / BSD Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 480287 **Project ID:** SRS# 2014-014

Analyst: ARM **Date Prepared:** 03/03/2014 **Date Analyzed:** 03/03/2014

Lab Batch ID: 935290 **Sample:** 651853-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	756	76	1000	887	89	16	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	773	77	1000	966	97	22	70-135	35	

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

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 480287, **Project ID:** SRS# 2014-014

Lab Batch #: 935252 **Sample:** 479940-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/28/14 13:38

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 935290 **Sample:** 480287-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/03/14 14:32

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.8	103	70-135	
o-Terphenyl	60.1	49.9	120	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 480287, **Project ID:** SRS# 2014-014

Lab Batch #: 935252 **Sample:** 480287-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/28/14 14:26

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 935290 **Sample:** 480287-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/03/14 13:39

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.9	112	70-135	
o-Terphenyl	54.6	50.0	109	70-135	

Lab Batch #: 935252 **Sample:** 651837-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/28/14 12:33

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 935290 **Sample:** 651853-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/03/14 09:29

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.8	100	92	70-135	
o-Terphenyl	43.5	50.0	87	70-135	

Lab Batch #: 935252 **Sample:** 651837-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/28/14 12:50

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Certificate of Analysis Summary 480287

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Lea to Jal 8" Line 1 Pump

Project Id: SRS# 2014-014
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Thu Feb-27-14 11:45 am
Report Date: 03-MAR-14
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	480287-001					
	Field Id:	Release Point Floor					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Feb-26-14 16:10					
BTEX by EPA 8021B	*Extracted:*	Feb-28-14 11:00					
	Analyzed:	Feb-28-14 14:26					
	Units/RL:	mg/kg	RL				
Benzene		ND	0.00122				
Toluene		ND	0.00245				
Ethylbenzene		ND	0.00122				
m_p-Xylenes		ND	0.00245				
o-Xylene		ND	0.00122				
Total Xylenes		ND	0.00122				
Total BTEX		ND	0.00122				
Inorganic Anions by EPA 300/300.1	*Extracted:*	Feb-28-14 14:30					
	Analyzed:	Feb-28-14 19:26					
	Units/RL:	mg/kg	RL				
Chloride		3.39	2.45				
Percent Moisture	*Extracted:*						
	Analyzed:	Mar-03-14 09:50					
	Units/RL:	%	RL				
Percent Moisture		18.5	1.00				

Kelsey Brooks
Project Manager

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

XENCO Laboratories

03-MAR-14

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

Reference: XENCO Report No(s): **480287**
Lea to Jal 8" Line 1 Pump
Project Address: 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) 480287. 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. 480287 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 02/12/2014 03:30:00 PM

Work Order #: 479262

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)?	2
#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?	N/A
#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)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	N/A
#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: Ruriko Konuma Date: 02/13/2014

Checklist reviewed by: Kelsey Brooks Date: 02/13/2014

479262

CHAIN OF CUSTODY RECORD

XENCO Laboratories
Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 12600 West I-20 East Odessa, TX 79765 (432)563-1800
;roool-c

Page 1 of 2

LAB W.O#: 479262

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:	bjarguijo@basinenv.com
Project ID:	Lea to Jal 8" Line 1 Pump SRS #2014-014	PO#:	PAA-C. Bryant
Invoice To:	Camille Bryant Plains All American	Quote #:	
Sampler Signature:		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 * VG	Pres Type**	Example Volatiles by 8260	TPH	Chloride								Hold Sample (CALL) Run PAH on Highest TPH Only !!
							# Cont	Lab Only:												
1	Floor #1	2/12/14	1000	S			1			X	X									
2	Floor #2		1005																	
3	N. Wall		1010																	
4	S. Wall		1015																	
5	E. Wall #1		1020																	
6	E. Wall #2		1025																	
7	W. Wall #1		1030																	
8	W. Wall #2		1035																	
9	Flowpath Floor #1		1040																	
0	Flowpath Floor #2	↓	1045	↓			↓			↓	↓									

* 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

Run BTEX if TPH <= 100

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	2.0 2 +5.7

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1		Basin Env.	2/12/14	15:30	Perla Rosa	MS	2-12-14	15:30
2						Xenco	2-13-14	14:30
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?	✓		

C.O.C. Serial #

 Revision Date: Nov 12, 2009

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order # : 479262 **Project ID:** SRS #2014-014

Lab Batch ID: 935044 **QC- Sample ID:** 479262-001 S **Batch #:** 1 **Matrix:** Solid

Date Analyzed: 02/26/2014 **Date Prepared:** 02/26/2014 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00108	0.108	0.0934	86	0.108	0.0927	86	1	70-130	35	
Toluene	<0.00216	0.108	0.0804	74	0.108	0.0760	70	6	70-130	35	
Ethylbenzene	<0.00108	0.108	0.0837	78	0.108	0.0833	77	0	71-129	35	
m_p-Xylenes	<0.00216	0.216	0.184	85	0.216	0.183	85	1	70-135	35	
o-Xylene	<0.00108	0.108	0.0966	89	0.108	0.0969	90	0	71-133	35	

Lab Batch ID: 934204 **QC- Sample ID:** 479262-017 S **Batch #:** 1 **Matrix:** Solid

Date Analyzed: 02/16/2014 **Date Prepared:** 02/14/2014 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<17.6	1170	975	83	1170	1200	103	21	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<17.6	1170	1020	87	1170	1300	111	24	70-135	35	

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

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

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

XENCO Laboratories

BS / BSD Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 479262 **Project ID:** SRS #2014-014

Analyst: AMB **Date Prepared:** 02/17/2014 **Date Analyzed:** 02/17/2014

Lab Batch ID: 934251 **Sample:** 651130-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

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	<2.00	50.0	49.4	99	50.0	49.6	99	0	80-120	20	

Analyst: ARM **Date Prepared:** 02/14/2014 **Date Analyzed:** 02/15/2014

Lab Batch ID: 934204 **Sample:** 651159-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	1020	102	1000	818	82	22	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1070	107	1000	824	82	26	70-135	35	

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

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 479262, **Project ID:** SRS #2014-014

Lab Batch #: 934204 **Sample:** 479262-017 S / MS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 08:41

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.9	99.9	93	70-135	
o-Terphenyl	38.3	50.0	77	70-135	

Lab Batch #: 934572 **Sample:** 479265-005 S / MS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/21/14 11:59

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	0.0302	0.0300	101	80-120	

Lab Batch #: 935044 **Sample:** 479262-001 S / MS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/26/14 19:49

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	80-120	

Lab Batch #: 934204 **Sample:** 479262-017 SD / MSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 09:07

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.8	116	70-135	
o-Terphenyl	49.9	49.9	100	70-135	

Lab Batch #: 935044 **Sample:** 479262-001 SD / MSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/26/14 20:05

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0335	0.0300	112	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: Lea to Jal 8" Line 1 Pump

Work Orders : 479262, **Project ID:** SRS #2014-014

Lab Batch #: 935044 **Sample:** 479262-011 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/27/14 20:12

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 934204 **Sample:** 651159-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/15/14 23:26

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.9	100	98	70-135	
o-Terphenyl	52.4	50.0	105	70-135	

Lab Batch #: 934572 **Sample:** 651408-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/21/14 12:47

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0266	0.0300	89	80-120	

Lab Batch #: 935044 **Sample:** 651698-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/26/14 18:28

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 934204 **Sample:** 651159-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/15/14 23:52

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	47.3	50.0	95	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 479262, **Project ID:** SRS #2014-014

Lab Batch #: 934572 **Sample:** 479262-015 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/21/14 18:31

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Lab Batch #: 934572 **Sample:** 479262-016 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/21/14 18:47

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 934572 **Sample:** 479262-017 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/22/14 14:12

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 934572 **Sample:** 479262-018 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/22/14 14:28

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 935044 **Sample:** 479262-001 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/26/14 20:36

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0245	0.0300	82	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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 479262,

Project ID: SRS #2014-014

Lab Batch #: 934204 **Sample:** 479262-016 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 07:50

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.7	106	70-135	
o-Terphenyl	55.2	49.9	111	70-135	

Lab Batch #: 934204 **Sample:** 479262-017 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 08:15

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	99.6	117	70-135	
o-Terphenyl	62.4	49.8	125	70-135	

Lab Batch #: 934204 **Sample:** 479262-018 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 09:34

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.5	99.9	96	70-135	
o-Terphenyl	50.4	50.0	101	70-135	

Lab Batch #: 934572 **Sample:** 479262-002 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/21/14 15:11

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 934572 **Sample:** 479262-003 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/21/14 15:27

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 479262,

Project ID: SRS #2014-014

Lab Batch #: 934204 **Sample:** 479262-006 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 02:50

TPH By SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.7	107	70-135	
o-Terphenyl	53.1	49.9	106	70-135	

Lab Batch #: 934204 **Sample:** 479262-007 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 03:15

TPH By SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.9	119	70-135	
o-Terphenyl	61.3	50.0	123	70-135	

Lab Batch #: 934204 **Sample:** 479262-008 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 03:40

TPH By SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.8	111	70-135	
o-Terphenyl	57.1	49.9	114	70-135	

Lab Batch #: 934204 **Sample:** 479262-009 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 04:05

TPH By SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.9	116	70-135	
o-Terphenyl	58.6	50.0	117	70-135	

Lab Batch #: 934204 **Sample:** 479262-010 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/16/14 04:30

TPH By SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	99.9	113	70-135	
o-Terphenyl	58.4	50.0	117	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

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

Certificate of Analysis Summary 479262

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Lea to Jal 8" Line 1 Pump

Project Id: SRS #2014-014
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Wed Feb-12-14 03:30 pm
Report Date: 28-FEB-14
Project Manager: Kelsey Brooks

Analysis Requested		479262-007		479262-008		479262-009		479262-010		479262-011		479262-012	
	Field Id:	W Wall #1		W Wall #2		Flowpath Floor #1		Flowpath Floor #2		Flowpath N Wall		Flowpath S Wall	
	Depth:												
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	Sampled:	Feb-12-14 10:30		Feb-12-14 10:35		Feb-12-14 10:40		Feb-12-14 10:45		Feb-12-14 10:50		Feb-12-14 10:55	
BTEX by EPA 8021B	Extracted:	Feb-20-14 17:00		Feb-20-14 17:00		Feb-26-14 08:00		Feb-26-14 08:00		Feb-26-14 08:00		Feb-20-14 17:00	
	Analyzed:	Feb-21-14 17:11		Feb-21-14 17:27		Feb-26-14 21:41		Feb-26-14 21:57		Feb-27-14 20:12		Feb-21-14 17:43	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00105	ND	0.00104	ND	0.00112	ND	0.00112	ND	0.00102	ND	0.00104
Toluene		ND	0.00209	ND	0.00208	ND	0.00224	ND	0.00223	ND	0.00204	ND	0.00207
Ethylbenzene		ND	0.00105	ND	0.00104	ND	0.00112	ND	0.00112	ND	0.00102	ND	0.00104
m_p-Xylenes		ND	0.00209	ND	0.00208	ND	0.00224	ND	0.00223	ND	0.00204	ND	0.00207
o-Xylene		ND	0.00105	ND	0.00104	ND	0.00112	ND	0.00112	ND	0.00102	ND	0.00104
Total Xylenes		ND	0.00105	ND	0.00104	ND	0.00112	ND	0.00112	ND	0.00102	ND	0.00104
Total BTEX		ND	0.00105	ND	0.00104	ND	0.00112	ND	0.00112	ND	0.00102	ND	0.00104
Inorganic Anions by EPA 300/300.1	Extracted:	Feb-17-14 10:00		Feb-17-14 10:00		Feb-17-14 10:00		Feb-17-14 10:00		Feb-17-14 10:00		Feb-17-14 10:00	
	Analyzed:	Feb-17-14 19:53		Feb-17-14 20:16		Feb-17-14 20:39		Feb-17-14 21:01		Feb-17-14 21:24		Feb-17-14 22:09	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3.11	2.10	6.18	4.16	7.02	4.50	3.60	2.24	4.27	2.04	4.41	2.09
Percent Moisture	Extracted:												
	Analyzed:	Feb-17-14 10:50		Feb-17-14 10:50		Feb-17-14 10:50		Feb-17-14 10:50		Feb-17-14 10:50		Feb-17-14 10:50	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.55	1.00	3.85	1.00	11.2	1.00	10.8	1.00	2.17	1.00	4.18	1.00
TPH By SW8015 Mod	Extracted:	Feb-14-14 17:00		Feb-14-14 17:00		Feb-14-14 17:00		Feb-14-14 17:00		Feb-14-14 17:00		Feb-14-14 17:00	
	Analyzed:	Feb-16-14 03:15		Feb-16-14 03:40		Feb-16-14 04:05		Feb-16-14 04:30		Feb-16-14 05:46		Feb-16-14 06:11	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	15.7	ND	15.6	ND	16.9	ND	16.8	ND	15.3	ND	15.6
C12-C28 Diesel Range Hydrocarbons		27.2	15.7	23.9	15.6	697	16.9	164	16.8	303	15.3	ND	15.6
C28-C35 Oil Range Hydrocarbons		ND	15.7	ND	15.6	140	16.9	36.9	16.8	64.7	15.3	ND	15.6
Total TPH		27.2	15.7	23.9	15.6	837	16.9	201	16.8	368	15.3	ND	15.6

Kelsey Brooks
Project Manager

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Lea to Jal 8" Line 1 Pump

Project ID: *SRS #2014-014*
Work Order Number(s): *479262*

Report Date: *28-FEB-14*
Date Received: *02/12/2014*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-934572 BTEX by EPA 8021B

Benzene, Ethylbenzene, Toluene, m_p-Xylenes , o-Xylene recovered below QC limits in the Matrix Spike.

Samples affected are: 479262-015, -018, -008, -017, -002, -013, -016, -003, -007, -012, -014.

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

XENCO Laboratories

28-FEB-14

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

Reference: XENCO Report No(s): **479262**
Lea to Jal 8" Line 1 Pump
Project Address: 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) 479262. 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. 479262 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

CHAIN OF CUSTODY RECORD

XENCO Laboratories

Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 12600 West I-20 East Odessa, TX 79765 (432)563-1800

Page 1 of 1

LAB W.O#: 478301

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:	Lea to Jal 8" Line 1 Pump SRS #2014-014	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 Signature: Bobby L Blakeman

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	Example Volatiles by 8260	Chloride	Paint Filter								Hold Sample (CALL) Run PAH on Highest TPH Only if:
								Pres Type**	I	I									
								# Cont	Lab Only:										
1	Stockpile	1/27/14	1000	S			1		X	X									
2																			
3																			
4																			
5																			
6																			
7																			
8																			
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 2 3 5.4

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	Bobby L Blakeman		1-28-14	4:23	Verla Rosers	MS	~~1-28-14~~	~~4:23~~
2								
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

Form 3 - MS Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 478301

Lab Batch #: 933037 **Project ID:** SRS# 2014-014

Date Analyzed: 01/30/2014 **Date Prepared:** 01/30/2014 **Analyst:** AMB

QC- Sample ID: 478310-003 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

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	3930	2920	7350	117	80-120	

Lab Batch #: 933037

Date Analyzed: 01/30/2014 **Date Prepared:** 01/30/2014 **Analyst:** AMB

QC- Sample ID: 478312-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

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	1770	1260	3340	125	80-120	X

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

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

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-933037 Inorganic Anions by EPA 300/300.1
Chloride recovered above QC limits in the Matrix Spike.
Samples affected are: 478301-001.
The Laboratory Control Sample for Chloride is within laboratory Control Limits

XENCO Laboratories

04-FEB-14

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

Reference: XENCO Report No(s): **478301**
Lea to Jal 8" Line 1 Pump
Project Address: 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) 478301. 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. 478301 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

CHAIN OF CUSTODY RECORD

XENCO Laboratories

Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 12600 West I-20 East Odessa, TX 79765 (432)563-1800

Page 1 of 1

LAB W.O#: 478240

Field billable Hrs :

* 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 _____

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:	cjbrant@pulp.com bjarguijo@basinenv.com
Project ID:	Lea to Jal 8" Line 1 Pump SRS #2014-014	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 Signature: Bobby Blakemore

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**	Example Volatiles by 8260	TPH									Hold Sample (CALL___) Run PAH on Highest TPH___ Only If	REMARKS
								# Cont	Lab Only:												
1	Stockpile	1/27/14	1000	S			1		X												
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
0																					

** 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

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SW	Surface Water	O	Oil
OW	Ocean/Sea Water	T	Tissue
PL	Product-Liquid	U	Urine
PS	Product-Solid	B	Blood
SL	Sludge		

Other _____

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	5.4

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	Bobby R Blakemore		1-28-14	4:28	Perla Rosendo	MS	1-28-14	4:28
2								
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 #

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 Revision Date: Nov 12, 2009

Form 3 - MS / MSD Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Order # : 478290 **Project ID:** SRS# 2014-014

Lab Batch ID: 932998 **QC- Sample ID:** 478237-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/29/2014 **Date Prepared:** 01/29/2014 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<17.4	1160	1090	94	1160	1100	95	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	55.2	1160	1080	88	1160	1090	89	1	70-135	35	

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

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

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

Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 478290, **Project ID:** SRS# 2014-014

Lab Batch #: 932998 **Sample:** 478237-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/29/14 20:35

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.9	116	70-135	
o-Terphenyl	52.6	50.0	105	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Certificate of Analysis Summary 478290

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Lea to Jal 8" Line 1 Pump

Project Id: SRS# 2014-014
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Tue Jan-28-14 04:28 pm
Report Date: 04-FEB-14
Project Manager: Kelsey Brooks

Analysis Requested								
	Lab Id:	478290-001						
	Field Id:	Stockpile						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Jan-27-14 10:00						
Percent Moisture	*Extracted:*							
	Analyzed:	Jan-31-14 13:10						
	Units/RL:	%	RL					
Percent Moisture		6.24	1.00					
TPH By SW8015 Mod	*Extracted:*	Jan-29-14 15:00						
	Analyzed:	Jan-29-14 22:10						
	Units/RL:	mg/kg	RL					
C6-C12 Gasoline Range Hydrocarbons		15400	319					
C12-C28 Diesel Range Hydrocarbons		21700	319					
C28-C35 Oil Range Hydrocarbons		ND	319					
Total TPH		37100	319					

Kelsey Brooks
Project Manager