Basin Environmental Service Technologies, LLC

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Effective Solutions

REMEDIATION SUMMARY &

SITE CLOSURE REQUEST

PLAINS PIPELINE, LP
LYNCH SOUTH TO JAL 16-INCH SUMP
Plains SRS #2014-060
Lea County, New Mexico
Unit Letter "O" (SW/SE), Section 32, Township 25 South, Range 37 East
Latitude 32.081629° North, Longitude 103.181101° West

Prepared For:

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

Prepared By:

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

December 2014

Ben J. Arguijo
Project Manager

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1.0 INTRODUCTION & BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin Environmental), on behalf of Plains Pipeline, LP (Plains), has prepared this *Remediation Summary & Site Closure Request* for the release site known as Lynch South to Jal 16-Inch Sump. The legal description of the release site is Unit Letter "O" (SW/SE), Section 32, Township 25 South, Range 37 East, in Lea County, New Mexico. The geographic coordinates of the release site are 32.081629° North latitude and 103.181101° West longitude. The property affected by the release is owned by the State of New Mexico and administered by the New Mexico State Land Office (NMSLO). A "Site Location Map" is provided as Figure 1.

On March 6, 2014, Plains discovered a release had occurred at its Lynch South to Jal facility. Equipment failure caused a sump to overfill, resulting in a release of crude oil. During initial response activities, the malfunctioning equipment was repaired, and a vacuum truck was utilized to recover free-standing liquid.

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 fifteen barrels (15 bbls) of crude oil were released and approximately twelve barrels (12 bbls) were recovered, for a net loss of approximately three barrels (3 bbls). The release impacted an area around the sump measuring approximately one thousand, one hundred square feet (1,100 ft^2). 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 information was unavailable for Section 32, Township 25 South, Range 37 East. A depth-to-groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately one hundred and twenty feet (120') below ground surface (bgs). However, historical and anecdotal evidence suggests that the depth to groundwater in the area is actually ninety feet (90') bgs. Based on the NMOCD ranking system, ten (10) points will be assigned to the site as a result of this criterion.

A search of the NMWRRS database indicated there are no water wells 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.

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 Lynch South to Jal 16-Inch Sump release site has an initial ranking score of ten (10) points. The soil remediation levels for a site with a ranking score of ten (10) points are as follows:

- Benzene – 10 mg/Kg (ppm)
- Benzene, ethylbenzene, toluene, and xylenes (BTEX) – 50 mg/Kg (ppm)
- Total petroleum hydrocarbons (TPH) – 1,000 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 March 13, 2014, after having procured the proper permit from the NMSLO (Right-of-Entry #ROE-2484), excavation of impacted soil commenced at the site. A photo-ionization detector (PID) and visual and olfactory senses were used to investigate the horizontal and vertical extent of impacted soil and to guide the excavation. From March 13 through March 18, 2014, excavated soil was stockpiled on-site, pending final disposition. The NMSLO ROE permit is provided as Appendix C.

On March 18, 2014, seven (7) soil samples (N. Wall, S. Wall, E. Wall, W. Wall, N. Floor, S. Floor, and Flow Path S. Floor) were collected from the floor and sidewalls of the excavation and submitted to Xenco Laboratories, Inc., in Odessa, Texas, for analysis of BTEX and TPH concentrations using Environmental Protection Agency (EPA) Methods SW 846-8021b and SW 846-8015M, respectively. Soil sample N. Floor was also analyzed for concentrations of chloride using EPA Method 300.1. 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.

Laboratory analytical results indicated benzene concentrations were less than the appropriate laboratory method detection limit (MDL) in all submitted soil samples. BTEX concentrations were less than the laboratory MDL in all submitted soil samples, with the exception of soil sample E. Wall, which exhibited a concentration of 0.0202 mg/kg. TPH concentrations were less than the laboratory MDL in all submitted soil samples, with the exception of soil sample N. Floor, which exhibited a concentration of 20.3 mg/kg. The chloride concentration in soil sample N. Floor was 3.09 mg/kg.

On March 28, 2014, one (1) soil sample (Flow Path N. Floor) was collected from the floor of the excavation and submitted to the laboratory for analysis of BTEX and TPH concentrations. Laboratory analytical results indicated the benzene concentration in soil sample Flow Path N. Floor was less than the laboratory MDL, the BTEX concentration was 0.218 mg/kg, and the TPH concentration was 336 mg/kg.

On April 2, 2014, approximately one hundred and eight cubic yards (108 yd^3) of impacted soil was transported to the Doom Landfarm, LLC (NMOCD Permit #NM-01-033), for disposal. Based on laboratory analytical results, 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 excavation were approximately seventy-five feet (75') in length (measured northeast-to-southwest, from the north wall of the excavation to the terminus of the flow path),

ranging in width from approximately five feet (5') to approximately twenty-five feet (25'), and ranging in depth from approximately one foot four inches (1' 4") 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 floor and sidewalls of the Lynch South to Jal 16-Inch Sump excavation were analyzed by an NMOCD-approved laboratory, and concentrations of benzene, BTEX, TPH, and chloride were below the regulatory remediation action levels established for the site by the NMOCD. Basin Environmental recommends Plains provide the NMOCD Hobbs District Office a copy of this *Remediation Summary & Site Closure Request* and request the NMOCD grant site closure to the Lynch South to Jal 16-Inch Sump release site.

6.0 LIMITATIONS

Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary & 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:

Copy 1: Dr. Tomas Oberding
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division (District 1)
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Hobbs, NM 88240
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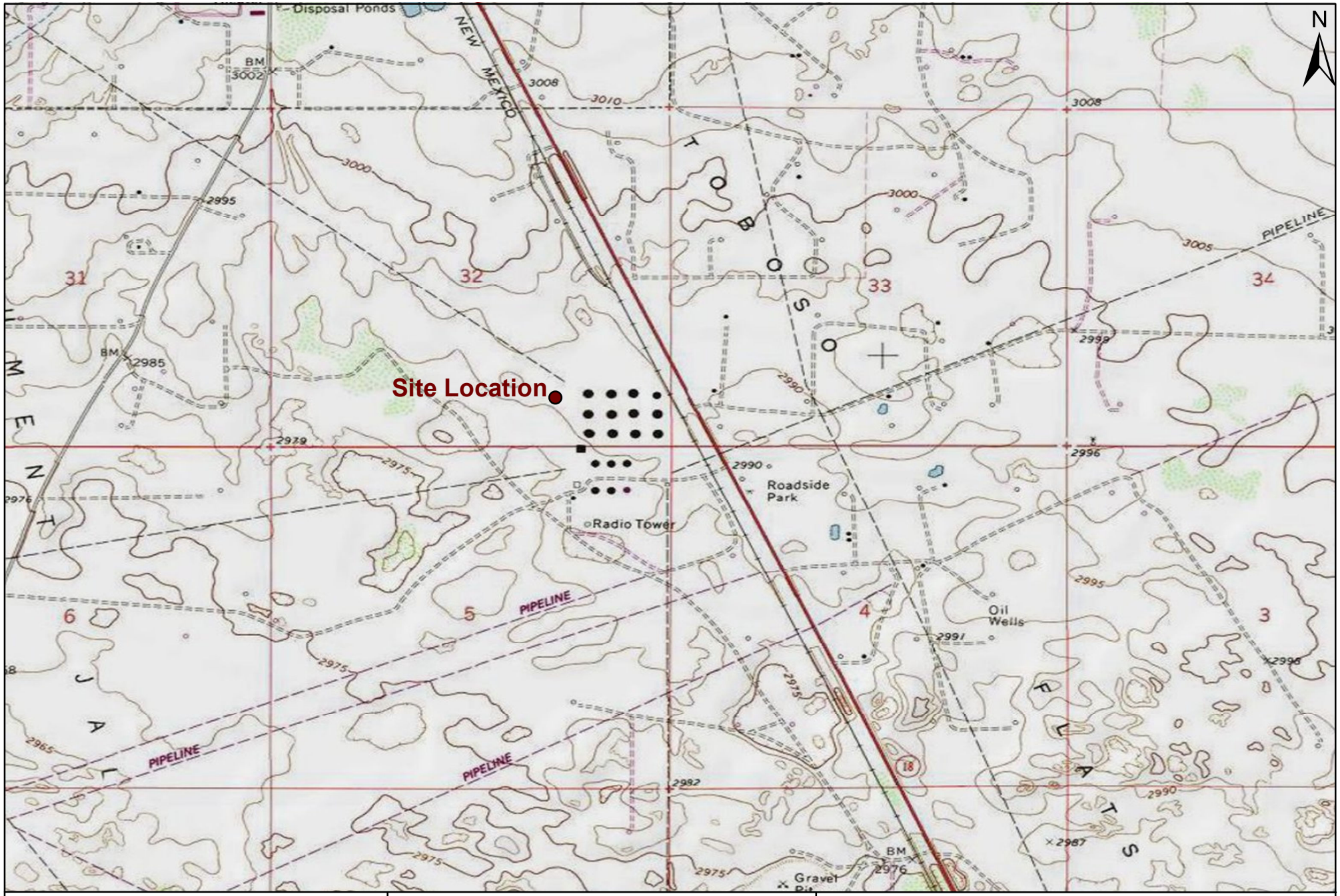
Copy 5: Basin Environmental Service Technologies, LLC
P.O. Box 301
Lovington, New Mexico 88260

Figures



1,000 500 0 1,000 2,000

Distance in Feet

Figure 1
Site Location Map
Plains Pipeline, LP
Lynch South to Jal 16-Inch Sump
Lea County, New Mexico
Plains SRS #: 2014-060

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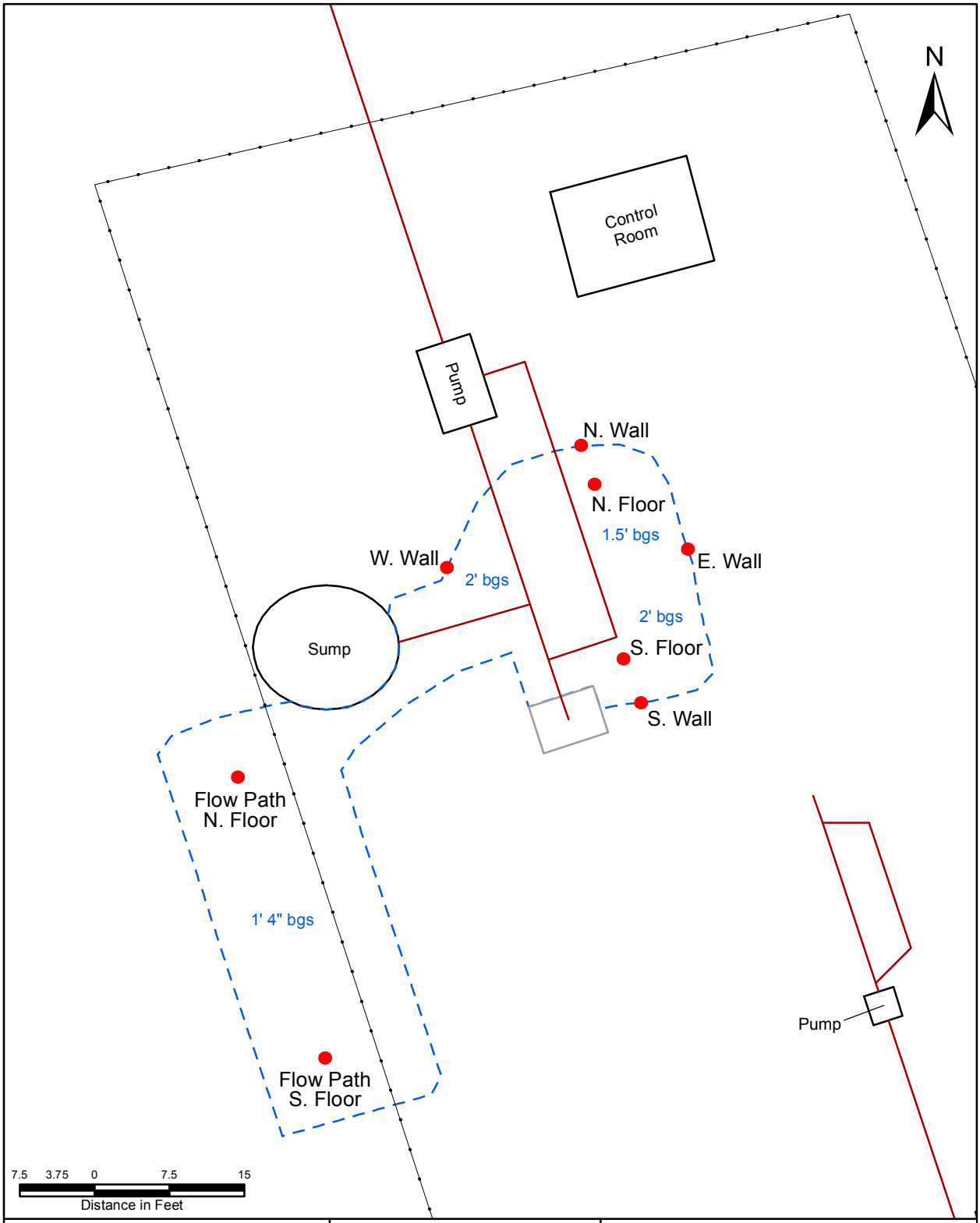
Basin Environmental Service Technologies, LLC
3100 Plains Hwy.
Lovington, NM 88260

Drawn By: BJA	Checked By: BRB
March 19, 2014	Scale: 1" = 2,000'



Legend:

- Excavation Extent
- Sample Location
- Pipeline
- Station Facility
- Fence
- Concrete Pad

Figure 2
Site & Sample Location Map
Plains Pipeline, LP
Lynch South to Jal 16-Inch Sump
Lea County, New Mexico
Plains SRS #: 2014-060

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

Drawn By: BJA	Checked By: BRB
Dec. 2, 2014	Scale: 1" = 15'

Tables

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

PLAINS PIPELINE, LP
LYNCH SOUTH TO JAL 16-INCH SUMP
LEA COUNTY, NEW MEXICO
PLAINS SRS #: 2014-060

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)
N. Wall	1' 6"	3/18/2014	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<0.0021	<15.4	<15.4	<15.4	<15.4	-
S. Wall	2'	3/18/2014	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<0.0021	<15.6	<15.6	<15.6	<15.6	-
E. Wall	1' 8"	3/18/2014	In-Situ	<0.0010	0.0055	0.0024	0.0085	0.0037	0.0123	0.0202	<15.3	<15.3	<15.3	<15.3	-
W. Wall	2'	3/18/2014	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<0.0022	<16.7	<16.7	<16.7	<16.7	-
N. Floor	1' 6"	3/18/2014	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<0.0021	<15.9	20.3	<15.9	20.3	3.09
S. Floor	2'	3/18/2014	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<0.0021	<15.6	<15.6	<15.6	<15.6	-
Flow Path S. Floor	1' 4"	3/18/2014	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<0.0021	<15.5	<15.5	<15.5	<15.5	-
Flow Path N. Floor	1' 4"	3/28/2014	In-Situ	<0.0012	0.0123	0.0146	0.123	0.0676	0.191	0.218	110	226	<31.1	336	-
NMOCD Criteria				**10**							**50**			**1,000**	**500**

- = Not analyzed.

Appendices

Appendix A
Photographs

Lynch South to Jal 16-Inch Sump - Release Site (Looking Northwest)

Lynch South to Jal 16-Inch Sump - Release Site (Looking Northeast)

Lynch South to Jal 16-Inch Sump - Release Site (Looking North-Northwest)

Lynch South to Jal 16-Inch Sump - Release Site (Looking North)

Lynch South to Jal 16-Inch Sump – Excavation (Looking North-Northwest)

Lynch South to Jal 16-Inch Sump – Excavation (Looking West)

Lynch South to Jal 16-Inch Sump – Excavation (Looking West-Northwest)

Lynch South to Jal 16-Inch Sump – Excavation (Looking South)

Appendix B
Laboratory Analytical Reports

Analytical Report 481586

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Lynch South to Jal 16-inch Sump

SRS# 2014-060

26-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)

26-MAR-14

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

Reference: XENCO Report No(s): **481586**
Lynch South to Jal 16-inch Sump
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) 481586. 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. 481586 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 481586

PLAINS ALL AMERICAN EH&S, Midland, TX

Lynch South to Jal 16-inch Sump

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
N. WALL	S	03-18-14 15:15		481586-001
S. WALL	S	03-18-14 15:40		481586-002
E. WALL	S	03-18-14 15:20		481586-003
W. WALL	S	03-18-14 15:25		481586-004
N. FLOOR	S	03-18-14 15:30		481586-005
S. FLOOR	S	03-18-14 15:35		481586-006
FLOWPATH S FLOOR	S	03-18-14 15:45		481586-007

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 481586

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Lynch South to Jal 16-inch Sump

Project Id: SRS# 2014-060
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Wed Mar-19-14 02:22 pm
Report Date: 26-MAR-14
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	481586-001		481586-002		481586-003		481586-004		481586-005		481586-006	
	Field Id:	N. WALL		S. WALL		E. WALL		W. WALL		N. FLOOR		S. FLOOR	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-18-14 15:15		Mar-18-14 15:40		Mar-18-14 15:20		Mar-18-14 15:25		Mar-18-14 15:30		Mar-18-14 15:35	
BTEX by EPA 8021B	***Extracted:***	Mar-20-14 16:00		Mar-20-14 16:00		Mar-20-14 16:00		Mar-20-14 16:00		Mar-20-14 16:00		Mar-24-14 09:00	
	Analyzed:	Mar-21-14 08:04		Mar-21-14 08:20		Mar-21-14 08:36		Mar-21-14 10:17		Mar-21-14 09:08		Mar-24-14 14:31	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00103	ND	0.00104	ND	0.00102	ND	0.00111	ND	0.00106	ND	0.00103
Toluene		ND	0.00205	ND	0.00207	0.00551	0.00204	ND	0.00223	ND	0.00212	ND	0.00206
Ethylbenzene		ND	0.00103	ND	0.00104	0.00240	0.00102	ND	0.00111	ND	0.00106	ND	0.00103
m_p-Xylenes		ND	0.00205	ND	0.00207	0.00854	0.00204	ND	0.00223	ND	0.00212	ND	0.00206
o-Xylene		ND	0.00103	ND	0.00104	0.00371	0.00102	ND	0.00111	ND	0.00106	ND	0.00103
Total Xylenes		ND	0.00103	ND	0.00104	0.0123	0.00102	ND	0.00111	ND	0.00106	ND	0.00103
Total BTEX		ND	0.00103	ND	0.00104	0.0202	0.00102	ND	0.00111	ND	0.00106	ND	0.00103
Inorganic Anions by EPA 300/300.1	***Extracted:***									Mar-21-14 10:00			
	Analyzed:									Mar-26-14 11:00			
	Units/RL:									mg/kg	RL		
Chloride										3.09	2.13		
Percent Moisture	***Extracted:***												
	Analyzed:	Mar-24-14 13:05		Mar-24-14 13:05		Mar-24-14 13:05		Mar-24-14 13:05		Mar-24-14 13:05		Mar-24-14 13:05	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		2.83	1.00	3.95	1.00	1.94	1.00	10.6	1.00	6.25	1.00	3.83	1.00
TPH By SW8015 Mod	***Extracted:***	Mar-21-14 17:00		Mar-21-14 17:00		Mar-21-14 17:00		Mar-21-14 17:00		Mar-21-14 17:00		Mar-21-14 17:00	
	Analyzed:	Mar-21-14 21:33		Mar-21-14 22:50		Mar-21-14 23:16		Mar-21-14 23:42		Mar-22-14 00:07		Mar-22-14 00:32	
	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	15.4	ND	15.6	ND	15.3	ND	16.7	ND	15.9	ND	15.6
C12-C28 Diesel Range Hydrocarbons		ND	15.4	ND	15.6	ND	15.3	ND	16.7	20.3	15.9	ND	15.6
C28-C35 Oil Range Hydrocarbons		ND	15.4	ND	15.6	ND	15.3	ND	16.7	ND	15.9	ND	15.6
Total TPH		ND	15.4	ND	15.6	ND	15.3	ND	16.7	20.3	15.9	ND	15.6

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 481586

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Lynch South to Jal 16-inch Sump

Project Id: SRS# 2014-060
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Wed Mar-19-14 02:22 pm
Report Date: 26-MAR-14
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	481586-007					
	Field Id:	FLOWPATH S FLOOR					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Mar-18-14 15:45					
BTEX by EPA 8021B	***Extracted:***	Mar-24-14 09:00					
	Analyzed:	Mar-24-14 14:47					
	Units/RL:	mg/kg	RL				
Benzene		ND	0.00103				
Toluene		ND	0.00207				
Ethylbenzene		ND	0.00103				
m_p-Xylenes		ND	0.00207				
o-Xylene		ND	0.00103				
Total Xylenes		ND	0.00103				
Total BTEX		ND	0.00103				
Percent Moisture	***Extracted:***						
	Analyzed:	Mar-24-14 13:05					
	Units/RL:	%	RL				
Percent Moisture		3.54	1.00				
TPH By SW8015 Mod	***Extracted:***	Mar-21-14 17:00					
	Analyzed:	Mar-22-14 00:57					
	Units/RL:	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		ND	15.5				
C12-C28 Diesel Range Hydrocarbons		ND	15.5				
C28-C35 Oil Range Hydrocarbons		ND	15.5				
Total TPH		ND	15.5				

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: Lynch South to Jal 16-inch Sump

Work Orders : 481586, **Project ID:** SRS# 2014-060

Lab Batch #: 936738 **Sample:** 481586-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/14 08:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

Lab Batch #: 936738 **Sample:** 481586-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/14 08:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 936738 **Sample:** 481586-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/14 08:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0259	0.0300	86	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 936738 **Sample:** 481586-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/14 09:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 936738 **Sample:** 481586-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/14 10:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0243	0.0300	81	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Lynch South to Jal 16-inch Sump

Work Orders : 481586,

Project ID: SRS# 2014-060

Lab Batch #: 936868 **Sample:** 481586-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/14 21:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.4	99.7	90	70-135	
o-Terphenyl	45.4	49.9	91	70-135	

Lab Batch #: 936868 **Sample:** 481586-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/14 22:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.7	105	70-135	
o-Terphenyl	53.9	49.9	108	70-135	

Lab Batch #: 936868 **Sample:** 481586-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/14 23:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.3	99.9	87	70-135	
o-Terphenyl	43.3	50.0	87	70-135	

Lab Batch #: 936868 **Sample:** 481586-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/14 23:42

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.7	99.6	94	70-135	
o-Terphenyl	49.3	49.8	99	70-135	

Lab Batch #: 936868 **Sample:** 481586-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/22/14 00:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.2	99.6	93	70-135	
o-Terphenyl	48.6	49.8	98	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Lynch South to Jal 16-inch Sump

Work Orders : 481586, **Project ID:** SRS# 2014-060

Lab Batch #: 936868 **Sample:** 481586-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/22/14 00:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.6	99.8	90	70-135	
o-Terphenyl	46.2	49.9	93	70-135	

Lab Batch #: 936868 **Sample:** 481586-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/22/14 00:57

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.0	99.8	95	70-135	
o-Terphenyl	48.4	49.9	97	70-135	

Lab Batch #: 936919 **Sample:** 481586-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/24/14 14:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 936919 **Sample:** 481586-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/24/14 14:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0257	0.0300	86	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 936738 **Sample:** 652791-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/21/14 01:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	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: Lynch South to Jal 16-inch Sump

Work Orders : 481586, **Project ID:** SRS# 2014-060

Lab Batch #: 936868 **Sample:** 652882-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/21/14 19:28

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.6	100	78	70-135	
o-Terphenyl	39.6	50.0	79	70-135	

Lab Batch #: 936919 **Sample:** 652884-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/24/14 12:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 936738 **Sample:** 652791-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/21/14 02:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

Lab Batch #: 936868 **Sample:** 652882-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/21/14 19:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	53.2	50.0	106	70-135	

Lab Batch #: 936919 **Sample:** 652884-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/24/14 12:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0354	0.0300	118	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Lynch South to Jal 16-inch Sump

Work Orders : 481586, **Project ID:** SRS# 2014-060

Lab Batch #: 936738 **Sample:** 652791-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/21/14 02:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	

Lab Batch #: 936868 **Sample:** 652882-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/21/14 20:18

SURROGATE RECOVERY STUDY

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

Lab Batch #: 936919 **Sample:** 652884-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/24/14 12:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0352	0.0300	117	80-120	

Lab Batch #: 936738 **Sample:** 481441-021 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/14 02:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0337	0.0300	112	80-120	

Lab Batch #: 936868 **Sample:** 481586-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/14 21:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.8	106	70-135	
o-Terphenyl	61.3	49.9	123	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: Lynch South to Jal 16-inch Sump

Work Orders : 481586, **Project ID:** SRS# 2014-060

Lab Batch #: 936919 **Sample:** 481704-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/24/14 13:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0334	0.0300	111	80-120	

Lab Batch #: 936738 **Sample:** 481441-021 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/14 03:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0343	0.0300	114	80-120	

Lab Batch #: 936868 **Sample:** 481586-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/14 22:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.8	105	70-135	
o-Terphenyl	62.7	49.9	126	70-135	

Lab Batch #: 936919 **Sample:** 481704-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/24/14 13:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	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: Lynch South to Jal 16-inch Sump

Work Order #: 481586 **Project ID:** SRS# 2014-060

Analyst: ARM **Date Prepared:** 03/20/2014 **Date Analyzed:** 03/21/2014

Lab Batch ID: 936738 **Sample:** 652791-1-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	0.0983	98	0.100	0.100	100	2	70-130	35	
Toluene	<0.00200	0.100	0.0972	97	0.100	0.0992	99	2	70-130	35	
Ethylbenzene	<0.00100	0.100	0.102	102	0.100	0.104	104	2	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.209	105	0.200	0.213	107	2	70-135	35	
o-Xylene	<0.00100	0.100	0.106	106	0.100	0.108	108	2	71-133	35	

Analyst: ARM **Date Prepared:** 03/24/2014 **Date Analyzed:** 03/24/2014

Lab Batch ID: 936919 **Sample:** 652884-1-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	0.105	105	0.100	0.107	107	2	70-130	35	
Toluene	<0.00200	0.100	0.105	105	0.100	0.107	107	2	70-130	35	
Ethylbenzene	<0.00100	0.100	0.112	112	0.100	0.113	113	1	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.231	116	0.200	0.234	117	1	70-135	35	
o-Xylene	<0.00100	0.100	0.115	115	0.100	0.117	117	2	71-133	35	

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

BS / BSD Recoveries

Project Name: Lynch South to Jal 16-inch Sump

Work Order #: 481586 **Project ID:** SRS# 2014-060

Analyst: AMB **Date Prepared:** 03/21/2014 **Date Analyzed:** 03/25/2014

Lab Batch ID: 937035 **Sample:** 652801-1-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	52.9	106	50.0	51.3	103	3	80-120	20	

Analyst: ARM **Date Prepared:** 03/21/2014 **Date Analyzed:** 03/21/2014

Lab Batch ID: 936868 **Sample:** 652882-1-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	907	91	1000	846	85	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	990	99	1000	834	83	17	70-135	35	

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

Form 3 - MS Recoveries

Project Name: Lynch South to Jal 16-inch Sump

Work Order #: 481586

Lab Batch #: 937035 **Project ID:** SRS# 2014-060

Date Analyzed: 03/25/2014 **Date Prepared:** 03/21/2014 **Analyst:** AMB

QC- Sample ID: 481522-021 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	553	528	1160	115	80-120	

Lab Batch #: 937035

Date Analyzed: 03/25/2014 **Date Prepared:** 03/21/2014 **Analyst:** AMB

QC- Sample ID: 481534-001 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	2800	2580	6310	136	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

Form 3 - MS / MSD Recoveries

Project Name: Lynch South to Jal 16-inch Sump

Work Order # : 481586 **Project ID:** SRS# 2014-060

Lab Batch ID: 936738 **QC- Sample ID:** 481441-021 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/21/2014 **Date Prepared:** 03/20/2014 **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	<0.00105	0.105	0.0916	87	0.105	0.0887	84	3	70-130	35	
Toluene	<0.00210	0.105	0.0849	81	0.105	0.0825	79	3	70-130	35	
Ethylbenzene	<0.00105	0.105	0.0901	86	0.105	0.0872	83	3	71-129	35	
m_p-Xylenes	<0.00210	0.210	0.119	57	0.211	0.117	55	2	70-135	35	X
o-Xylene	<0.00105	0.105	0.0939	89	0.105	0.0914	87	3	71-133	35	

Lab Batch ID: 936919 **QC- Sample ID:** 481704-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/24/2014 **Date Prepared:** 03/24/2014 **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	<0.00547	0.547	0.518	95	0.547	0.536	98	3	70-130	35	
Toluene	<0.0109	0.547	0.530	97	0.547	0.556	102	5	70-130	35	
Ethylbenzene	<0.00547	0.547	0.555	101	0.547	0.575	105	4	71-129	35	
m_p-Xylenes	<0.0109	1.09	1.14	105	1.09	1.19	109	4	70-135	35	
o-Xylene	<0.00547	0.547	0.567	104	0.547	0.594	109	5	71-133	35	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: Lynch South to Jal 16-inch Sump

Work Order # : 481586 **Project ID:** SRS# 2014-060

Lab Batch ID: 936868 **QC- Sample ID:** 481586-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/21/2014 **Date Prepared:** 03/21/2014 **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	<15.4	1030	934	91	1030	988	96	6	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.4	1030	1000	97	1030	1030	100	3	70-135	35	

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

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

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

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

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Sample Duplicate Recovery

Project Name: Lynch South to Jal 16-inch Sump

Work Order #: 481586

Lab Batch #: 936912 **Project ID:** SRS# 2014-060

Date Analyzed: 03/24/2014 13:05 **Date Prepared:** 03/24/2014 **Analyst:** WRU

QC- Sample ID: 481586-002 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	3.95	4.08	3	20	

Lab Batch #: 936912

Date Analyzed: 03/24/2014 13:05 **Date Prepared:** 03/24/2014 **Analyst:** WRU

QC- Sample ID: 481781-001 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	13.7	15.0	9	20	

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

BRL - Below Reporting Limit

XENCO Laboratories

Environmental Asbestos Radiochemistry

CHAIN OF CUSTODY RECORD

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

LAB W.O #: 481586

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:	Lynch South to Jal 16-Inch Sump SRS #2014-060	PO#:	PAA-C. Bryant
Invoice To:	Camille Bryant Plains All American	Quote #:	

Sampler Signature: BL Blackmon

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	Example Volatiles by 8260 (Cont Type * VC; Pres Type** I)	TPH (GC; I)	BTEX (GC; I)	Chloride (GC; I)							Hold Sample (CALL_) Run PAH on Highest TPH__ Only	REMARKS
# Cont									Lab Only	Lab Only:									
1	N. Wall	3/18/14	1515	S			1		X	X									
2	S. Wall	3/18/14	1540	S			1		X	X									
3	E. Wall	3/18/14	1520	S			1		X	X									
4	W. Wall	3/18/14	1525	S			1		X	X									
5	N. Floor	3/18/14	1530	S			1		X	X	X								
6	S. Floor	3/18/14	1535	S			1		X	X									
7	Flowpath S. Floor	3/18/14	1545	S			1		X	X									
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; Other____
S Soil/Sediment/Solid; W Wipe; A Air; O Oil; T Tissue; U Urine; B Blood

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 7.9

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	Linda Blackwood	Basin Env.	3/19/14	2:22	Azucena Joyy	M.S	3/19/14	2:22
2					[illegible]		3/20/14	10:00
3								
4								

Lab Use Only (YES NO N/A)

- Non-Conformances found?
- Samples intact upon arrival?
- Received on Wet Ice?
- Labeled with proper preservatives?
- Received within holding time?
- Custody seals intact?
- VOCs rec'd w/o headspace?
- Proper containers used?
- pH verified-acceptable, excl VOCs?
- Received on time to meet HTs?

C.O.C. Serial #

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

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 03/19/2014 02:22:00 PM

Work Order #: 481586

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)?	7.9
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**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: Kelsey Brooks Date: 03/20/2014

Checklist reviewed by: Kelsey Brooks Date: 03/20/2014

Analytical Report 482409

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Lynch South To Jal 16-inch Sump

2014-060

04-APR-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)

04-APR-14

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

Reference: XENCO Report No(s): **482409**
Lynch South To Jal 16-inch Sump
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) 482409. 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. 482409 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

Sample Cross Reference 482409

PLAINS ALL AMERICAN EH&S, Midland, TX

Lynch South To Jal 16-inch Sump

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Flowpath N. Floor	S	03-28-14 14:00		482409-001

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 482409

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Lynch South To Jal 16-inch Sump

Project Id: 2014-060
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Mon Mar-31-14 04:17 pm
Report Date: 04-APR-14
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	482409-001					
	Field Id:	Flowpath N. Floor					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Mar-28-14 14:00					
BTEX by EPA 8021B	***Extracted:***	Apr-02-14 15:00					
	Analyzed:	Apr-02-14 17:57					
	Units/RL:	mg/kg	RL				
Benzene		ND	0.00124				
Toluene		0.0123	0.00248				
Ethylbenzene		0.0146	0.00124				
m_p-Xylenes		0.123	0.00248				
o-Xylene		0.0676	0.00124				
Total Xylenes		0.191	0.00124				
Total BTEX		0.218	0.00124				
Percent Moisture	***Extracted:***						
	Analyzed:	Apr-01-14 17:00					
	Units/RL:	%	RL				
Percent Moisture		19.7	1.00				
TPH by Texas1005	***Extracted:***	Apr-02-14 16:00					
	Analyzed:	Apr-02-14 22:42					
	Units/RL:	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		110	31.1				
C12-C28 Diesel Range Hydrocarbons		226	31.1				
C28-C35 Oil Range Hydrocarbons		ND	31.1				
Total TPH 1005		336	31.1				

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: Lynch South To Jal 16-inch Sump

Work Orders : 482409, **Project ID:** 2014-060

Lab Batch #: 937762 **Sample:** 482409-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/02/14 17:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 937766 **Sample:** 482409-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/02/14 22:42

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	99.9	125	70-135	
o-Terphenyl	60.2	50.0	120	70-130	

Lab Batch #: 937766 **Sample:** 653420-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/02/14 15:00

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.0	100	99	70-135	
o-Terphenyl	47.6	50.0	95	70-130	

Lab Batch #: 937762 **Sample:** 653415-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/02/14 16:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0252	0.0300	84	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

Lab Batch #: 937766 **Sample:** 653420-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/02/14 15:25

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	63.5	50.0	127	70-130	

* 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: Lynch South To Jal 16-inch Sump

Work Orders : 482409,

Project ID: 2014-060

Lab Batch #: 937762 **Sample:** 653415-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/02/14 16:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0324	0.0300	108	80-120	

Lab Batch #: 937766 **Sample:** 653420-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/02/14 15:51

SURROGATE RECOVERY STUDY

TPH by Texas1005

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	61.8	50.0	124	70-130	

Lab Batch #: 937762 **Sample:** 653415-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/02/14 16:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 937762 **Sample:** 482409-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/02/14 17:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 937766 **Sample:** 482409-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/02/14 23:07

SURROGATE RECOVERY STUDY

TPH by Texas1005

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.9	128	70-135	
o-Terphenyl	64.7	50.0	129	70-130	

* 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: Lynch South To Jal 16-inch Sump

Work Orders : 482409, **Project ID:** 2014-060

Lab Batch #: 937766 **Sample:** 482409-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/02/14 23:32

TPH by Texas1005 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	99.8	127	70-135	
o-Terphenyl	64.4	49.9	129	70-130	

* 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: Lynch South To Jal 16-inch Sump

Work Order #: 482409 **Project ID:** 2014-060

Analyst: ARM **Date Prepared:** 04/02/2014 **Date Analyzed:** 04/02/2014

Lab Batch ID: 937762 **Sample:** 653415-1-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	0.0904	90	11	70-130	35	
Toluene	<0.00200	0.100	0.100	100	0.100	0.0892	89	11	70-130	35	
Ethylbenzene	<0.00100	0.100	0.105	105	0.100	0.0932	93	12	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.217	109	0.200	0.193	97	12	70-135	35	
o-Xylene	<0.00100	0.100	0.109	109	0.100	0.0983	98	10	71-133	35	

Analyst: ARM **Date Prepared:** 04/02/2014 **Date Analyzed:** 04/02/2014

Lab Batch ID: 937766 **Sample:** 653420-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by Texas1005 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	<25.0	1000	852	85	1000	861	86	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<25.0	1000	975	98	1000	918	92	6	70-135	35	

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

Form 3 - MS Recoveries

Project Name: Lynch South To Jal 16-inch Sump

Work Order #: 482409

Lab Batch #: 937762 **Project ID:** 2014-060

Date Analyzed: 04/02/2014 **Date Prepared:** 04/02/2014 **Analyst:** ARM

QC- Sample ID: 482409-001 S **Batch #:** 1 **Matrix:** Soil

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	<0.00124	0.124	0.117	94	70-130	
Toluene	0.0123	0.124	0.153	113	70-130	
Ethylbenzene	0.0146	0.124	0.145	105	71-129	
m_p-Xylenes	0.123	0.248	0.414	117	70-135	
o-Xylene	0.0676	0.124	0.209	114	71-133	

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

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: Lynch South To Jal 16-inch Sump

Work Order # : 482409 **Project ID:** 2014-060

Lab Batch ID: 937766 **QC- Sample ID:** 482409-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/02/2014 **Date Prepared:** 04/02/2014 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by Texas1005 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	110	1240	1340	99	1240	1280	94	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	226	1240	1530	105	1240	1560	108	2	70-135	35	

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

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

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

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

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Sample Duplicate Recovery

Project Name: Lynch South To Jal 16-inch Sump

Work Order #: 482409

Lab Batch #: 937713 **Project ID:** 2014-060

Date Analyzed: 04/01/2014 17:00 **Date Prepared:** 04/01/2014 **Analyst:** WRU

QC- Sample ID: 482409-001 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	19.7	19.8	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

CHAIN OF CUSTODY RECORD

XENCO Laboratories — Environmental Asbestos Radiochemistry

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

;roool-c

Page 1 of 1

LAB W.O # : 482409

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:	Lynch South to Jal 16-Inch Sump SRS #2014-060	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 Blakemore

Circle One Event: Daily Weekly Monthly Quartely 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	BTEX	Chloride							Hold Sample (CALL) Run PAH on Highest TPH Only if
								# Cont	Lab Only	Lab Only:										
1	Flowpath N. Floor	3/28/14	1400	S			1				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, 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, 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	1 2 3 6.3

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	Bobby L Blakemore	Basin	3-31-14	4:17	Debra Reeves	MS	3-31-14	4:17
2								
3							4-1-14	10:30
4								4.0C+1

Lab Use Only

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

C.O.C. Serial #

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

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

 Revision Date: Nov 12, 2009

Appendix C

Permits

Ray Powell, M.S., D.V.M.
COMMISSIONER

State of New Mexico
Commissioner of Public Lands
310 OLD SANTA FE TRAIL
P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

COMMISSIONER'S OFFICE
Phone (505) 827-5760
Fax (505) 827-5766
www.nmstatelands.org

April 2, 2014

Plains Pipeline LP c/o Basin Environmental
3100 Plains Hwy
Lovington, New Mexico 88260

Attn: Ben Arguijo

Re: Right-of-Entry Application No. ROE-2484

Dear Mr. Arguijo

Enclosed is the completed captioned Right-of-Entry permit. If any corrections are necessary, please let us know and we will retype or amend this lease as necessary.

If you have any questions, please feel free to contact this office at the above address or for Donald Martinez, Surface Director @ (505) 827-5731 or myself @ 827-5710.

Sincerely,

Anthony Vigil, Management Analyst
Right of Way Section
Surface Resource Management Division

NEW MEXICO
STATE LAND OFFICE
When we Take Care of our Land, Our Land Takes Care of us!

NEW MEXICO STATE LAND OFFICE
Commissioner of Public Lands
Ray Powell, M.S., D.V.M.
New Mexico State Land Office Building
P.O. Box 1148, Santa Fe, NM 87504-1148

2014 MAR 31 AM 7 48

RIGHT OF ENTRY PERMIT
CONTRACT NO. ROE-2484
Remediation

1. RIGHT OF ENTRY PERMIT

This permit is issued under the authority of NMSA 1978, Section 19-1-2. Therefore, and in consideration of and subject to the terms, covenants, conditions, agreements, obligations and reservations contained in the permit and all other existing rights, the Commissioner of Public Lands, New Mexico State Land Office, State Of New Mexico, hereinafter called "COMMISSIONER," grants to **Plains Pipeline LP c/o Basin Environmental.** State of Incorporation (if applicable) , whose address is **3100 Plains Hwy, Lovington, New Mexico 88260**, **hereinafter** called "PERMITTEE," authorized use of a specific tract(s) of State Trust Land only for the term, and only for the permitted use, described in this permit.

2. TERM AND LAND DESCRIPTION

Right of entry is granted for a term of **180 days**, commencing, **March 21, 2014,** and ending **September 18, 2014** to the following State Trust Lands.

Section 32, Township 25 South, Range 37 East. SW ¼ SE ¼ Lea County

3. APPLICATION and PROCESSING FEE

$530.00

4. PERMITTED USE, PERSONNEL, EQUIPMENT AND MATERIALS

Permitted use is for the purpose of: **Perform soil remediation activities following the**

overflow of a sump, which resulted in the release of approxiamately fifteen (15) barrels of crued oil.

Personnel present on State Trust Land: **Representatives of Plains, Basin Environmental & subcontracted trucking companies**
Equipment & Materials present on State Trust Land: **Backhoe, loader, dump trucks, pickups and hydrovac**

Prior to execution of project company must identify and contact the Grazing Lessee.

The granting of this permit does not allow access across private lands.

5. IMPROVEMENTS

No improvements shall be placed on the premises without the prior written consent of the Commissioner.

6. RESERVATIONS

Commissioner reserves the right to execute leases, rights of way, easements, permits, exchange agreements, sale agreements, permits and other lawful rights on or across the land covered by this permit, including but not limited to any such rights for mining purposes and for the extraction of oil, gas, salt, geothermal resources, and other mineral deposits there from and the right to go upon, explore for, mine, remove and sell same.

7. COMPLIANCE WITH LAWS

Permittee shall at its own expense comply fully with and be subject to all applicable regulations, rules, ordinances, and requirements of law or of the Commissioner, including but not limited to the regulations of the State Land Office; Chapter 19 NMSA governing State Trust Lands; federal and state environmental laws and regulations; and the New Mexico Cultural Properties Act, NMSA 1978 Sections 18-6-1 through 18-6-23. It is illegal for any person or his agent to appropriate, excavate, injure, or destroy any historic, or prehistoric ruin or monument, or any object of historical, archaeological, architectural, or scientific value situated on lands owned or controlled by the State Land Office without a valid permit issued by the Cultural Properties Review Committee and approved by the Commissioner of Public Lands.

8. HOLD HARMLESS AND IMDEMNIFICATION

Permittee shall save, hold harmless, indemnify and defend Commissioner, the State Land Office, the State of New Mexico, and any of their officers, employees or agents, in their official and individual capacities, of and from any and all liability, claims, losses, damages, costs, and fees arising out of or alleged to arise out of, or directly or indirectly connected with, the operations of Permittee under this permit on or off State Trust Lands or arising out of the presence on State Trust Lands of any equipment, material, agent,

invitee, contractor or subcontractor of Permittee. This Hold Harmless and Indemnification clause covers any claim, including any brought in any court or before any administrative agency, of any loss or alleged loss, and any damages or alleged damages asserted with respect to any violation or alleged violation of any state, federal or local law or regulation, including but not limited to any environmental law or regulation, any cultural properties law (including the New Mexico Cultural Properties Act, cited above) or regulation, and any alleged damage to the property, rights or interests of any State Land Office lessee, right-of-way holder, or other permittee.

9. AMENDMENT

This permit shall not be altered, changed, or amended except by an instrument in writing executed by Commissioner and Permittee.

10. WITHDRAWAL

Commissioner reserves the right to withdraw any or all of the land authorized for use under this permit. If applicable, Permittee shall vacate the acreage specified within 30 days after receipt of written notification of withdrawal from the Commissioner.

11. CANCELLATION

The violation by Permittee of any of the terms, conditions, or covenants of this permit or the nonpayment by Permittee of the fees due under this permit shall at the option of the Commissioner be considered a default and shall cause the cancellation of this permit 30 days after Permittee has been sent written notice of such.

12. PRESERVE AND PROTECT

The Permittee agrees to preserve and protect the natural environmental conditions of the land encompassed in this permit, and to take those reclamation or corrective actions that are accepted soil and water conservation practices and that are deemed necessary by the Commissioner to protect the land from pollution, erosion, or other environmental degradation. The Permittee further agrees not to injure the property of, or interfere with the operations or rights of, any State Land Office lessee, right-of-way holder, easement holder or other permittee who has rights to use the State Trust Land subject to this permit.

13. RECLAMATION, REMOVAL OF EQUIPMENT, MATERIALS, AND WASTE

The Permittee agrees to reclaim those areas that may be damaged by activities conducted thereon.

The Permittee agrees to remove from the State Trust Lands, no later than the end of the term of this permit, all equipment, and materials it has placed or brought upon the land and to clean up and remove from the land any trash, waste, effluent, or other products used or brought upon the land in connection with this permit.

14. SPECIAL INSTRUCTIONS AND/OR RESTRICTIONS

1. No off road traffic allowed.

2. No wood collection or tree cutting allowed.

3. Disturbing, dislodging, damaging, defacing, destroying or removing historical archaeological, paleontological or cultural sites or artifacts is prohibited.

4. Disturbing, dislodging, damaging, defacing, destroying any improvement, fixture, item, object or thing placed or located in, under or upon the land is prohibited.

5. This permit does not grant a right to enter State Trust Lands to which there is no public access.

6. Any uses or activities not within the scope of this permit are not allowed unless prior written approval from the Commissioner of Public Lands is granted.

7. OTHER

WITNESS the hands and seals of PERMITTEE and COMMISSIONER on the day(s) and year entered below.

_____ Telephone: (575) 396-2378
PERMITTEE

2014 MAR 31 PM 1 48

ACKNOWLEDGMENT

STATE OF New Mexico)

COUNTY OF Lea)

The foregoing instrument was acknowledged before me this 26 day of March, 20 14.

My Commission Expires: 10/2/16 Katherine J. Wieser
NOTARY PUBLIC

_____ DATE: 4-1-14
COMMISSIONER OF PUBLIC LANDS

ROE- 2484

Appendix D

Release Notification & Corrective Action (Form C-141)

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

State of New Mexico
Energy Minerals and Natural Resources

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

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 Lynch South to Jal 16 Inch Sump	Facility Type Sump

Surface Owner New Mexico State Land	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	32	25S	37E					Lea

Latitude N 32.081629 Longitude W 103.181101°

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release 15 bbls	Volume Recovered 12 bbls
Source of Release Sump	Date and Hour of Occurrence 03/06/2014 @ 11:40	Date and Hour of Discovery 03/06/2014 @ 11:50
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Verbal notification to Geoff Leking	
By Whom? Camille Bryant	Date and Hour 03/06/2014 @ 14:00	
Was a Watercourse Reached? ☐ Yes ☒ **No**	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Equipment failure caused a sump to overfill resulting in a release of crude oil. Equipment was replaced.

Describe Area Affected and Cleanup Action Taken. The released crude oil impacted an area of approximately 1,100 square feet around the sump. 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:	OIL CONSERVATION DIVISION	
Printed Name: Camille Bryant	Approved by District Supervisor:	
Title: Remediation Coordinator	Approval Date:	Expiration Date:
E-mail Address: cjbryant@paalp.com	Conditions of Approval:	Attached ☐
Date: Phone: (575) 441-1099		

* Attach Additional Sheets If Necessary