Basin Environmental Service Technologies, LLC

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a 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 Specia

NMOCO - DIST 1 7101/14

Prepared By:

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

June 2014

Ben J. Arguijo Project Manager

8701419041410

District 1 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

Form C-141 Revised October 10, 2003

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

220 S. St. Francis Dr., Santa Fe, NM 87505 Santa F	e. NM 87505 side of form
Release Notificatio	on and Corrective Action
	OPERATOR Initial Report Final Report
Name of Company Plains Pineline, LP	Contact Camille Bryant
Address 2530 State Hwy, 214, Denver City, TX 79323	Telephone No. (575) 441-1099
acility Name Lea to Jal 8" Line 1 Pump	Facility Type Pump
urface Owner Plains Pineline I P Mineral Owner	Lease No.
unace owner Thans ripenne, E.T. Infineral owner	HOBBS OCD
LOCATIO	IN OF RELEASE AP + 30.025.12803 JAC 128
Jnit Letter Section Township Range Feet from the North F 28 20S 37E 37	h/South Line Feet from the East/West Line GANIZ 0 2014 Lea
Latitude N 32,54656	9° Longitude W 103.258268° RECEIVED
INATURE Oil	Volume of Release 240 bbls Volume Recovered 190 bbls
ource of Release Pump	Date and Hour of Occurrence Date and Hour of Discovery
	01/22/2014 @ 02:00 01/22/2014 @ 02:00
Vas Immediate Notice Given?	If YES, To Whom? Verbal notification to Geoff Leking
by Whom? Camille Bryant	Date and Hour 01/22/2014 @ 15:30
Vas a Watercourse Reached?	If YES, Volume Impacting the Watercourse.
Yes 🛛 No	
Describe Cause of Problem and Remedial Action Taken.* An outboard rude oil release. Describe Area Affected and Cleanup Action Taken. The released crude The impacted area will be remediated as per applicable NMOCD guidel	bearing on a centrifugal pump failed causing a major seal failure resulting in a oil impacted approximately 12,100 square feet inside Plains Pipeline Lea Station.
hereby certify that the information given above is true and complete to regulations all operators are required to report and/or file certain release public health or the environment. The acceptance of a C-141 report by should their operations have failed to adequately investigate and remedi or the environment. In addition, NMOCD acceptance of a C-141 report federal, state, or local laws and/or regulations.	the best of my knowledge and understand that pursuant to NMOCD rules and notifications and perform corrective actions for releases which may endanger the NMOCD marked as "Final Report" does not relieve the operator of liability ate contamination that pose a threat to ground water, surface water, human health t does not relieve the operator of responsibility for compliance with any other
Signature: Cruello Logae	Approved by District Supervisor
Fitle: Remediation Coordinator	Approval Date: 12814 Expiration Date: 32814
E-mail Address: cjbryant@paalp.com	Conditions of Approval: SUBMIT PINAL Attached
E-mail Address: cjbryant@paalp.com	Conditions of Approval: SUBMIT PINAL Attached

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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 & 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 ft²) 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-togroundwater 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. 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 yd³) 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, 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 yd³) 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 (14'), and 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:

- Copy 1: Geoffrey Leking New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division (District 1) 1625 French Drive Hobbs, NM 88240 geoffreyr.leking@state.nm.us
- Copy 2: Jeff Dann Plains All American Pipeline, LP 333 Clay Street, Suite 1600 Houston, Texas 77002 jpdann@paalp.com
- Copy 3: Camille Bryant Plains All American Pipeline, LP 2530 State Highway 214 Denver City, Texas 79323 cjbryant@paalp.com
- Copy 4: Basin Environmental Service Technologies, LLC P.O. Box 301 Lovington, New Mexico 88260





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

						METHOD: EI	PA SW 846-	9021B, 5030			ME	THOD: 801	SM	TOTAL	300.1
SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE	SOIL	BENZENE (ma/Ka)	TOLUENE	ETHYL- BENZENE	M.P XYLENES	O-XYLENE	TOTAL	TOTAL BTEX	GRO C ₆ -C ₁₂	DRO C ₁₂ -C ₂₈	ORO C ₂₈ -C ₃₅	C6-C35	CHLORIDE (ma/Ka)
	10001			18.18.11	IR. Rul	(mg/Kg)	(mg/Kg)	IR. R.I.	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	18. 8.11
Stockpile	N/A	1/27/2014	Stockpiled							ř.	15,400	21,700	<319	37,100	9.47
							The second second	H H H H	The second	Contraction of the			Number of Street, Stre	the stand at	
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
					No. of Street, or other	State State	A COLORADO	Contraction of the local division of the loc		and the second second		The second second	A CONTRACTOR	四個部門	「二月」の方
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
						「「「「「「」」」」	The second second		A DE LE STREET		11 - 17			No. of the local distance of the local dista	a contraction
East Wall #2b	ŝ	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	5,	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
		Constant of the	and the second second				THE WE WE	Carlo No. 12	T OTAL	Culture 100	The second second			Carlo and	
East Wall #1b	5	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
and the second se	and the second se	and the second se	State and		Constant of the second		Traffic and	The states	The second second			the strange	the survey	中に「	No. of Street, or Stre
NMOCD Recommended	Remediation	Action Lev	el	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: AZ00989): Arizona (AZ0758)





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.

msboah

Kelsey Brooks Project Manager

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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



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): 478290 Report Date: 04-FEB-14 Date Received: 01/28/2014

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



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

Certificate of Analysis Summary 478290 PLAINS ALL AMERICAN EH&S, Midland, TX Project Name: Lea to Jal 8" Line 1 Pump



Date Received in Lab: Tue Jan-28-14 04:28 pm Report Date: 04-FEB-14

Project Location: NM				Report Date:	04-FEB-14	
				Project Manager:	Kelsey Brooks	
	Lab Id:	478290-001				_
Australia Damarad	Field Id:	Stockpile				-
naisanhay sistinuy	Depth:					
	Matrix:	SOIL				
	Sampled:	Jan-27-14 10:00				
Percent Moisture	Extracted:					-
	Analyzed:	Jan-31-14 13:10				
	Units/RL:	% H	SL			_
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 H	SL			-
C6-C12 Gasoline Range Hydrocarbons		15400 3	618			_
C12-C28 Diesel Range Hydrocarbons		21700 3	618			_
C28-C35 Oil Range Hydrocarbons		C ON	618			-
Total TPH		37100 3	618			_
						٦

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

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Munz Moah

Kelsey Brooks Project Manager

Page 5 of 13

Final 1.000



Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Or Lab Batch	ders: 4/829 #: 932998	Sample: 478290-001 / SMP	Bate	Project ID	: SRS# 2014- : Soil	014	
Units:	mg/kg	Date Analyzed: 01/29/14 22:10	SU	RROGATE R	ECOVERY	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ane		104	99.8	104	70-135	
o-Terphenyl			39.5	49.9	79	70-135	
Lab Batch #	#: 932998	Sample: 650368-1-BLK / BI	K Batc	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 01/29/14 16:30	SU	RROGATE R	ECOVERY S	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ine		109	100	109	70-135	
o-Terphenyl			49.1	50.0	98	70-135	
Lab Batch	#: 932998	Sample: 650368-1-BKS / BF	KS Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 01/29/14 16:55	su	RROGATE R	ECOVERY	STUDY	
	ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes					
1-Chloroocta	ane		129	100	129	70-135	
o-Terphenyl			60.8	50.0	122	70-135	
Lab Batch	#: 932998	Sample: 650368-1-BSD / BS	SD Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 01/29/14 17:21	SU	RROGATE R	ECOVERY S	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ane		111	100	111	70-135	
o-Terphenyl			54.6	50.0	109	70-135	
Lab Batch	#: 932998	Sample: 478237-001 S / MS	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 01/29/14 20:11	SU	RROGATE R	ECOVERY	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ane		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								Proje	ect ID: S	SRS# 2014-	014	
Analyst:	ARM		Da	te Prepare	d: 01/29/201	4			Date An	alyzed: 0	1/29/2014		
Lab Batch ID:	: 932998 Sam	ple: 650368-1-BK	S	Batch	#: 1				1	Matrix: S	bilo		
Units:	mg/kg			BLAN	K /BLANK S	SPIKE / B	S YNK S	PIKE DUPI	ICATE F	RECOVE	RY STUD	X	
	TPH By SW8015 Mo	P	Blank ample Result	Spike Added	Blank Spike	Blank Spike	Spike Added	Blank Spike	Blk. Spk Dup.	RPD	Control Limits	Control Limits	Flag

Analytes IBI ICI IDI IE C6-C12 Gasoline Range Hydrocarbons <15.0 1000 1040 104 104		Spike	Dup.	RPD %	Limits %R	Limits %RPD	Flag
<15.0 1000 1040 104 104	[E] Re	sult [F]	[6]				
	1000	949	95	6	70-135	35	
2-C28 Diesel Range Hydrocarbons <15.0 1000 1020 102 100	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

Page 9 of 13



Sample Duplicate Recovery



Project Name: Lea to Jal 8" Line 1 Pump

Work	Orden	4.	479200
work	Order	#:	4/0290

Lab Batch #: 933189			Project I	D: SRS# 20	14-014
Date Analyzed: 01/31/2014 13:10 Date I	Prepared: 01/31/2014	Ana	lyst: WRU		
QC- Sample ID: 478237-001 D	Batch #: 1	Mat	rix: Soil		
Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Percent Moisture	13.8	15.0	8	20	
Lab Batch #: 933189					
Date Analyzed: 01/31/2014 13:10 Date I	Prepared: 01/31/2014	Ana	lyst: WRU		
QC- Sample ID: 478298-005 D	Batch #: 1	Mat	rix: Soil		
Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	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 Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 01/28/2014 04:28:00 PM **Temperature Measuring device used :** Work Order #: 478290 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: Murs Moah Kelsey Brooks Checklist reviewed by: Murs Moah Kelsey Brooks

Date: 01/29/2014

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: AZ00989): 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



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

Certificate of Analysis Summary 478301 PLAINS ALL AMERICAN EH&S, Midland, TX Project Name: Lea to Jal 8" Line 1 Pump



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

478301-001		
t: Stockpile		
22		
:: SOIL		
l: Jan-27-14 10:00		
t: Jan-30-14 10:00		
l: Jan-30-14 19:47		
a mg/kg RL		
9.47 2.13		
4		
I: Feb-03-14 11:15		
Pass 1.0		
4		
I: Jan-31-14 13:10		
.: % RL		
6.12 1.00		
	Jan-27-14 10:00 Jan-30-14 10:00 Jan-30-14 19:47 mg/kg RL 9.47 2.13 Feb-03-14 11:15 Feb-03-14 11:15 Pass 1.0 9.6 RL 9.6 RL	Jan-27-14 10:00 Jan-30-14 10:00 Jan-30-14 19:47 mg/kg RL 9.47 2.13 Feb-03-14 11:15 Feb-03-14 11:15 Feb-03-14 11:15 Fass 1.0 Pass 1.0 Pass 1.0 6.12 1.00

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Murs Moah

Kelsey Brooks Project Manager



BS / BSD Recoveries





Work Ord	ler #: 478301			Project ID: SRS# 2014-014
Analyst:	AMB		Date Prepared: 01/30/2014	Date Analyzed: 01/30/2014
Lab Batch I	ID: 933037	Sample: 650379-1-BKS	Batch #: 1	Matrix: Solid
Units:	mg/kg		BLANK /BLANK SPIKE / BLANK 9	SPIKE DUPLICATE RECOVERY STUDY

<2.00 50.0 47.1 94 50.0 47.4 95 1 80-120 20	nic Anions by EPA 300/300.1 Sat	Blank mple 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
		<2.00	50.0	47.1	94	50.0	47.4	95	-	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



Work Order #: 478301



Project Name: Lea to Jal 8" Line 1 Pump

Lab Batch #: 933189			Project I	D: SRS# 20	14-014
Date Analyzed: 01/31/2014 13:10	Date Prepared: 01/31/2014	4 Ana	lyst: WRU		
QC- Sample ID: 478237-001 D	Batch #: 1	Mat	trix: Soil		
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Percent Moisture	13.8	15.0	8	20	
Lab Batch #: 933189					
Date Analyzed: 01/31/2014 13:10	Date Prepared: 01/31/2014	4 Ana	lyst: WRU		
QC- Sample ID: 478298-005 D	Batch #: 1	Mat	trix: Soil		
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
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 Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 01/28/2014 04:23:00 PM **Temperature Measuring device used :** Work Order #: 478301 Sample Receipt Checklist Comments

4.5
N/A
Yes
N/A
N/A
N/A
Yes
Yes
No
Yes
N/A
N/A
N/A

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

Analyst:

PH Device/Lot#:

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

Date: 01/29/2014

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)

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> 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: AZ00989): 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

ofect Location: INM					Project Manager: 1	Celsey Brooks	
	Lab Id:	479262-001	479262-002	479262-003	479262-004	479262-005	479262-006
Analysis Reauested	Field Id:	Floor #1	Floor #2	N Wall	S Wall	E Wall #1	E Wall #2
marcas have configure	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-Xylencs		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	11100.0 UN	ND 0.00116	ND 0.00104	ND 0.00102	ND 0.00101
Total BTEX		ND 0.00108	11100'0 QN	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

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

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

Kurs Roah

Project Manager Kelsey Brooks

Final 1.002



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

Certificate of Analysis Summary 479262 PLAINS ALL AMERICAN EH&S, Midland, TX Project Name: Lea to Jal 8" Line 1 Pump



Date Received in Lab: Wed Feb-12-14 03:30 pm Report Date: 28-FFB-14

Project Location: NM							
					Project Manager: 1	Kelsey Brooks	
	Lab Id:	479262-013	479262-014	479262-015	479262-016	479262-017	479262-018
Analysis Requested	Field Id: Depth:	Runoff Area Floor	Runoff Area NW. Wall	Runoff Area S Wall	Pooling Area Floor	Pooling Area E Wall	Pooling Area W Wall
	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	1.71 UN	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	I.71 UN	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

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing. Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Murs Moah

Kelsey Brooks Project Manager

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Project Name: Lea to Jal 8" Line 1 Pump

Work Ord Lab Batch #	ers: 47926 934204	52, Sample: 479262-001 / SMP	Bate	Project ID h: 1 Matrix	: SRS #2014- : Solid	-014	
Units:	mg/kg	Date Analyzed: 02/16/14 00:43	SU	RROGATE R	ECOVERY	STUDY	
	TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctar	ie.	Analytes	110	00.8	110	70.126	
o-Terphenyl			62.1	99.8	118	70-135	
Lab Batch #	934204	Sample: 479262-002 / SMP	Bate	49.9	· Solid	70-133	
Units:	mg/kg	Date Analyzed: 02/16/14 01:08	SU	RROGATE R	ECOVERY	STUDY	
	TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctar	ie		96.1	99.8	96	70-135	
o-Terphenyl			50.9	49.9	102	70-135	
Lab Batch #	934204	Sample: 479262-003 / SMP	Batc	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/16/14 01:34	SU	RROGATE R	ECOVERY	STUDY	
	TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctar	ie		92.4	99.6	93	70-135	
o-Terphenyl			48.5	49.8	97	70-135	
Lab Batch #	934204	Sample: 479262-004 / SMP	Batc	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/16/14 01:59	SU	RROGATE R	ECOVERY	STUDY	
	TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctar	ie		104	99.9	104	70-135	
o-Terphenyl			54.1	50.0	108	70-135	
Lab Batch #	934204	Sample: 479262-005 / SMP	Batc	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/16/14 02:25	SU	RROGATE R	ECOVERY	STUDY	
	TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctar	ie		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.



Project Name: Lea to Jal 8" Line 1 Pump

Work Ord Lab Batch #:	ers: 47926 934204	52, Sample: 479262-011 / SMP	Batc	Project ID h: 1 Matrix	: SRS #2014- : Solid	014	
Units:	mg/kg	Date Analyzed: 02/16/14 05:46	SU	RROGATE R	ECOVERY S	STUDY	
	TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctan	e		116	100	116	70-135	
o-Terphenyl			56.8	50.0	114	70-135	
Lab Batch #:	934204	Sample: 479262-012 / SMP	Batc	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/16/14 06:11	SU	RROGATE R	ECOVERY S	STUDY	
	TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctan	e		120	99.6	120	70-135	
o-Terphenyl			61.3	49.8	123	70-135	
Lab Batch #:	934204	Sample: 479262-013 / SMP	Batc	h: 1 Matrix	: Solid	_	
Units:	mg/kg	Date Analyzed: 02/16/14 06:36	SU	RROGATE R	ECOVERY S	STUDY	
	ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1 (11)		Analytes	2000		1-1		
1-Chlorooctan	e		94.0	99.7	94	70-135	
o-Terphenyl	021201		48.9	49.9	98	70-135	
Lab Batch #:	934204	Sample: 479262-014 / SMP	Batc	h: I Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/16/14 07:01	SU	RROGATE R	ECOVERY S	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctan	e		92.6	99.8	93	70-135	
o-Terphenyl			47.6	49.9	95	70-135	
Lab Batch #:	934204	Sample: 479262-015 / SMP	Batc	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/16/14 07:25	SU	RROGATE R	ECOVERY S	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctan	ie		96.8	99.8	97	70-135	
o-Terphenyl			50.7	10.0	102		

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Project Name: Lea to Jal 8" Line 1 Pump

Work Or Lab Batch	ders : 47926 #: 934572	52, Sample: 479262-007 / SMP	Bate	Project ID h: 1 Matrix	: SRS #2014 : Solid	-014	
Units:	mg/kg	Date Analyzed: 02/21/14 17:11	SU	RROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0302	0.0300	101	80-120	
4-Bromoflu	orobenzene		0.0297	0.0300	99	80-120	
Lab Batch	#: 934572	Sample: 479262-008 / SMP	Batcl	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/21/14 17:27	SU	RROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene		0.0323	0.0300	108	80-120	
4-Bromoflu	orobenzene		0.0284	0.0300	95	80-120	
Lab Batch	#: 934572	Sample: 479262-012 / SMP	Batcl	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/21/14 17:43	SU	RROGATE R	ECOVERY S	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	benzene		0.0279	0.0300	93	80-120	
4-Bromoflue	orobenzene		0.0267	0.0300	89	80-120	
Lab Batch	#: 934572	Sample: 479262-013 / SMP	Batcl	h: 1 Matrix	: Solid	00 120	_
Units:	mg/kg	Date Analyzed: 02/21/14 17:59	SU	RROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	benzene		0.0304	0.0300	101	80-120	
4-Bromoflue	orobenzene		0.0265	0.0300	88	80-120	
Lab Batch	#: 934572	Sample: 479262-014 / SMP	Batch	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/21/14 18:15	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	benzene		0.0300	0.0300	100	80-120	
4-Bromoflue	orobenzene		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 / BAll results are based on MDL and validated for QC purposes.



Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 479262, Lab Batch #: 935044 Sample: 479262-004 / SMP	Bate	Project ID h: 1 Matrix	: SRS #2014- : Solid	014	
Units: mg/kg Date Analyzed: 02/26/14 20:53	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0242	0.0300	81	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	
Lab Batch #: 935044 Sample: 479262-005 / SMP	Batc	h: 1 Matrix	: Solid		
Units: mg/kg Date Analyzed: 02/26/14 21:09	su	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	
Lab Batch #: 935044 Sample: 479262-006 / SMP	Batc	h: 1 Matrix	: Solid		
Units: mg/kg Date Analyzed: 02/26/14 21:25	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B 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	Batc	h: 1 Matrix	: Solid		
Units: mg/kg Date Analyzed: 02/26/14 21:41	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	
Lab Batch #: 935044 Sample: 479262-010 / SMP	Batc	h: 1 Matrix	: Solid		
Units: mg/kg Date Analyzed: 02/26/14 21:57	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	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.



Project Name: Lea to Jal 8" Line 1 Pump

Work Or Lab Batch	rders: 47926 #: 934572	52, Sample: 651408-1-BKS / B	KS Bate	Project ID h: 1 Matrix	: SRS #2014- : Solid	-014	
Units:	mg/kg	Date Analyzed: 02/21/14 11:44	SU	RROGATE R	ECOVERY	STUDY	
	BTE	Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluor	obenzene	. in my tes	0.0316	0.0300	105	80.120	
4-Bromoflu	orobenzene		0.0318	0.0300	105	80.120	
Lab Batch	#: 935044	Sample: 651698-1-BKS/B	KS Bate	h: 1 Matrix	· Solid	80-120	
Units:	mg/kg	Date Analyzed: 02/26/14 19:17	SU	RROGATE R	ECOVERY S	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluor	obenzene		0.0282	0.0300	94	80-120	
4-Bromoflu	orobenzene		0.0318	0.0300	106	80-120	
Lab Batch	#: 934204	Sample: 651159-1-BSD / B	SD Bate	h: Matrix	: Solid	00-120	
Units:	mg/kg	Date Analyzed: 02/16/14 00:17	SU	RROGATE R	ECOVERY	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	tane		93.5	100	94	70-135	
o-Terpheny	1		55.7	50.0	111	70-135	
Lab Batch	#: 934572	Sample: 651408-1-BSD / B	SD Bate	h: Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/21/14 11:28	su	RROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0320	0.0300	107	80-120	
4-Bromoflu	orobenzene		0.0321	0.0300	107	80-120	
Lab Batch	#: 935044	Sample: 651698-1-BSD / B	SD Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/26/14 19:33	SU	RROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0289	0.0300	96	80-120	
4-Bromoflu	orobenzene		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.

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BS / BSD Recoveries





VERY STUDY	RECO	LICATE	PIKE DUP	BLANK SI	SPIKE / I	K /BLANK	BLAN			mg/kg	Units:
Solid	Matrix:					1 :#: 1	Batch	S	Sample: 651408-1-Bk	D: 934572	Lab Batch I
02/21/2014	Analyzed:	Date A			14	ed: 02/20/20	ate Prepare	D		ARM	Analyst:
0-+107# CVIC	ject ID:	Pro								er #: 479262	Work Ord

BTEX by EPA Analytes	.8021B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Bik. 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	-	70-130	35	
Toluene		<0.00200	0.100	0.108	108	0.100	0.109	109	-	70-130	35	
Ethylbenzene		<0.00100	0.100	0.106	106	0.100	0.107	107	-	71-129	35	
m_p-Xylenes		<0.00200	0.200	0.207	104	0.200	0.210	105	-	70-135	35	
o-Xylene		<0.00100	0.100	0.108	108	0.100	0.109	109	1	71-133	35	
Analyst: ARM		Da	te Prepare	d: 02/26/201	4			Date An	alyzed: 0	2/26/2014		
Lab Batch ID: 935044	Sample: 651698-1-B	KS	Batch	#: 1					Matrix: S	bilo		
Units: mg/kg			BLAN	K /BLANK S	PIKE / B	S YNK S	PIKE DUPL	ICATE	RECOVE	CRY STUD	X	

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 Page 19 of 26

Final 1.002

XENCO
Laboratories

Form 3 - MS Recoveries Project Name: Lea to Jal 8" Line 1 Pump

Date Prepared: 02/20/2014

Batch #: 1



 Work Order #: 479262

 Lab Batch #:
 934572

 Date Analyzed:
 02/21/2014

 QC- Sample ID:
 479265-005 S

 Reporting Units:
 mg/kg

Project ID: SRS #2014-014

Analyst: ARM

Matrix: Solid

Reporting Units: mg/kg	MATE	IX / MA	TRIX SPIKE	RECO	VERY STU	DY
BTEX by EPA 8021B Analytes	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
ab Batch #: 934251						
Date Analyzed: 02/17/2014	Date Prepared: 02/17	7/2014	Α	nalyst: A	MB	
QC- Sample ID: 479262-001 S	Batch #: 1		N	latrix: S	Solid	
Reporting Units: mg/kg	MATE	UX / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300 Analytes	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	
ab Batch #: 934251						
Date Analyzed: 02/17/2014	Date Prepared: 02/1	7/2014	А	nalyst: /	MB	
QC- Sample ID: 479262-011 S	Batch #: 1		N	Aatrix: S	Solid	
Reporting Units: mg/kg	MATE	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300 Analytes	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	

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

BRL - Below Reporting Limit



Work Order #: 479262

Sample Duplicate Recovery



Project Name: Lea to Jal 8" Line 1 Pump

Lab Batch #: 934151			Project I	D: SRS #20	14-014
Date Analyzed: 02/17/2014 10:50	Date Prepared: 02/17/2014	Ana Ana	alyst: WRU		
QC- Sample ID: 479262-001 D	Batch #: 1	Ma	trix: Solid		
Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Percent Moisture	7.96	8.90	11	20	
Lab Batch #: 934151					
Date Analyzed: 02/17/2014 10:50	Date Prepared: 02/17/2014	Ana	lyst: WRU		
QC- Sample ID: 479262-011 D	Batch #: 1	Ma	trix: Solid		
Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[8]			
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

2	NCO.	U	HAIN	OF C	UST	YOO	REC	ORD		a	ace 1 of 2			* Container	Type Codes
	Houston: 4143 Greenbriar Dr.	Stafford, TX 77-	477 (281)240	14200 Od	essa: 1260	0 West I-20 I	East Odes	La, TX 79765	(432)563-1800			1		al Clear TS	TerraCore Sampler
lab	Dratorics proofe									LAB W.O	:#		200	ar Pro-preserved A lass Amber TE lass Clear ZE	Air Canster Tediar Bag Zip Lock Bag
Company			ha			-		K		LIGIO DIIIGOI	. 211		PC PL	Nastic Amber Prestic Clear	C Plastic Clear
CONFIDENCE	9- Basin Environmental Service Technold	ogies, LLC	:	(2)	5)396-231	TAT	Work	Days=D	Need results	s by:	Ē	me:	Other.		
Address	3100 Plains Hwy.		Fa	x: (51	5)396-142	6	(Std	(2-70) 5	Hrs 1D 2D 31	0 4D 5D 7D 1	0D 14D Other		Size(s) 40ml,	r 20z, 4oz, 8oz, 16oz, 125 ml, 250 ml, 500 m	3202, 1Gal I, 1L, Other
City:	Lovington	Stat	e: NM Z	p: 88	260		1	1	ANALY	SES REQUE	STED		1	Preservative	Type Codes
PM/Attn.	Ben Arguijo	Eme	sit: bja	rguijo@ba	sinenv.com	Com 7	Ape - G	0					A Nor	ne E.HCL	L loe
Project I	D: Lea to Jal 8" Line 1 Pump SRS #2014-014		PG	D#: PA	A-C. Bryant	Pres T	add						Nacional Contraction of the second se	G. Na, S, O3 K.	Znac&NaOH L Asbc Acid&NaOH
Invoice	To: Camille Bryant Plains All America	us	ă	iote #:			.092	9	20			9	A AUO	A Matrix Ty	pe Codes
Sampler	Signature:	ircie One Eveni emi-Annual An	t: Daily W	eekty Mo	nthiy Qua	eldm	9 Á 9					iqmieë 1	H4 NA	Ground Water S Waste Water V Drinking Water A	Soit/Sedment/Solid Air Air
# əlqm	Sample ID	Collect C. Date T	ime C	latrix ode ^ ILIeld		containers EX3	Volation	147	24/0		_	ыон	() 「12104Q1H no こののでののの	Surface Water Constrikes Water 1 Product-Liquid U Product-Solid B Studge	0 OI Tissue Urine Blood
ES						*	Cont Lab	Only:						REMA	RKS
-	Flow on the N. Wall 2	112/14	050	S		-		×						**Run BTEX#	rPH <= 100**
2	Flow Dath S. Wall		055	_									14-14		
3	Markelouse Point Poor	1	00,	-	_		The second					100	S	molent	ine
40	ice to base tom think	1 1	105	-									Ch	anged	2 DUNY
5	reverterse Point S. Wall		0/1	_			1					929	Y	B-34	I-mail
9	Boolmy Aren Ploor	11	15	_			(iii)						10 Mg	-	
2	Pooling Area E. Wall	11	OC	-			and a second					and a second			
8	Pooling Area W. Wall	1 M	50	1				N					THE W	1	
6	1						100					and a second			
0							120						and		
4	teg. Program / Clean-up Std	STATE for	Certs & Re	s6e	QA/QC L	evel & Ce	rtification	and the second s	EDDs	COC & Labe	ts Coolers	De duer :	7 Lat	o Use Only	YES NO NIA
CTLs T Other:	RRP DW NPDES LPST DYCIN PL	TX GA NC S NAM Office:	C NJ PA C	K LA	2 3 4 AC DoD-E	LAP Other:	E QAPP	ADaP1	her.	S Metch Incomple Absont Uncle	# 1 2.0°C2	3 25	Non-Cor Samples	viormances found? a intact upon arrival?	1
	Relipquished by		Affiliation		Date		Time		Received by	Affiliation	Date	Time	Receive	d on Wet Ice?	1
1	all lit	7	2 sinta	1. o	pla/s	8	080	Pe	la Reser	SN B	うししゃ	115	20 Labeled	with proper preservativ d within holding time?	
2	1.1							8	LU	Xenco	2-3-14	14:30	VOCs m	seals intact? Icid wio headspace?	
en				_		_		3					Proper o	ortainers used? ed-acceptable, excl VO	C V W
4								_					Receive	d on time to meet HTs?	
B&A La	aboratories: Hobbs 575-392-7550 D rvice Centers: Atlanta 770-449-880	Jallas 214-90 0 Lakeland I	2-0300 H 363-646-8	526 Tam	281-242- pa 803-5	4200 Od 43-8099 I	essa 43. Philadel	2-563-180 phia 610-	0 San Antoni 955-5649 Sou	o 210-509-3334 ith Carolina 80	Phoenix 602-4 3-543-8099	37-0330	C.O.O	C. Serial #	

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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: AZ00989): 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



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

Certificate of Analysis Summary 480287 PLAINS ALL AMERICAN EH&S, Midland, TX Project Name: Lea to Jal 8" Line 1 Pump



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

				administration and for a	MINNIN LANIAR .	
	Lab Id:	480287-0	01			
Australia Damachad	Field Id:	Release Point	Floor			
naisanhay sistimuv	Depth:					
	Matrix:	SOIL				
	Sampled:	Feb-26-14 1	6:10			
TPH By SW8015 Mod	Extracted:	Mar-03-14 (7:00			
	Analyzed:	Mar-03-14	3:39			
	Units/RL:	mg/kg	RL			
C6-C12 Gasoline Range Hydrocarbons	-	QN	18.4			
C12-C28 Diesel Range Hydrocarbons		22.6	18.4			
C28-C35 Oil Range Hydrocarbons		QN	18.4			
Total TPH		22.6	18.4			

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

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Murs Moah Kelsey Brooks

Project Manager

Final 1.000



Flagging Criteria



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

BRL Below Reporting Limit.

RL Reporting Limit

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

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOO Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(432) 563-1800	(432) 563-171
(770) 449-8800	(770) 449-547
(602) 437-0330	

Phone

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Fax

240,4280

5

3



Project Name: Lea to Jal 8" Line 1 Pump

Work Or Lab Batch	ders : 48028 #: 935290	37, Sample: 651853-1-BKS / BF	S Batel	Project ID	: SRS# 2014- : Solid	014	
Units:	mg/kg	Date Analyzed: 03/03/14 09:52	SU	RROGATE R	ECOVERY S	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	tane		96.3	100	96	70-135	
o-Terpheny	1		46.6	50.0	93	70-135	-
Lab Batch	#: 935252	Sample: 651837-1-BSD / BS	D Batcl	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/28/14 13:06	SU	RROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0291	0.0300	97	80-120	
4-Bromoflu	orobenzene		0.0309	0.0300	103	80-120	
Lab Batch	#: 935290	Sample: 651853-1-BSD / BS	D Batch	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 03/03/14 10:28	SU	RROGATE R	ECOVERY S	STUDY	
	ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooc	tane		111	100	111	70-135	
o-Terpheny	1		57.2	50.0	114	70-135	
Lab Batch	#: 935252	Sample: 479940-003 S / MS	Batch	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 02/28/14 13:22	SU	RROGATE R	ECOVERY S	STUDY	
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]	•	
1,4-Difluor	obenzene		0.0288	0.0300	96	80-120	
4-Bromoflu	orobenzene		0.0312	0.0300	104	80-120	
ab Batch	#: 935290	Sample: 480287-001 S / MS	Batcl	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 03/03/14 14:05	SU	RROGATE R	ECOVERY S	STUDY	
	ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroco	tane		105	100	105	70-135	
o-Ternhens	d		60.7	50.0	105	70-135	
o-respireny	•		00.7	30.0	121	10-155	

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / BAll results are based on MDL and validated for QC purposes.

-	
5	oric
2	rat
5	abo
	CENCO

BS / BSD Recoveries





Sample: 651837-1-BKS Work Order #: 480287 Lab Batch ID: 935252 ARM Analyst:

Date Prepared: 02/28/2014 Batch #: 1

Project ID: SRS# 2014-014 Date Analyzed: 02/28/2014 Matrix: Solid

Units: mg/kg			BLANI	K /BLANK S	SPIKE / I	BLANK S	PIKE DUP	LICATE	RECOV	ERY STUI	X	
BTEX by EPA 802 Analytes	18	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	-	70-130	35	
Toluene		<0.00200	0.100	0.0938	94	0.100	0.0947	95	-	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	-	70-135	35	
o-Xylene		<0.00100	0.100	0.103	103	0.100	0.104	104	1	71-133	35	
Analyst: AMB		Da	te Prepare	ed: 02/28/20	4			Date A	nalyzed: (02/28/2014		
Lab Batch ID: 935265 Sa	mple: 651751-1-E	3KS	Batch	1 #: 1					Matrix: S	Solid		
Units: mg/kg			BLAN	K/BLANK S	PIKE / H	STANK S	PIKE DUPI	ICATE	RECOVI	ERY STUI	Y	
Inorganic Anions by EPA	300/300.1	Blank Sample Result	Spike Added	Blank Spike	Blank Spike	Spike Added	Blank Spike	Blk. Spk Dup.	RPD	Control Limits	Control Limits	Flag
Analytee			[B]		D	[E]	Result [F]	[G]	0/	NoK	%KPD	

20

80-120

2

94

46.9

50.0

92

45.8

50.0

<2.00

Analytes Chloride 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

Page 11 of 17

Final 1.000

XENCO Laboratories Proj	Form 3 - MS ect Name: Lea to Jal	Recov 8" Line	v eries e 1 Pump		E	
Work Order #: 480287					DS# 2014 01	
Lab Batch #: 935265			Proje	ect ID: 5	KS# 2014-01	4
Date Analyzed: 02/28/2014	Date Prepared: 02/2	8/2014	Α	nalyst: A	MB	
QC- Sample ID: 480134-003 S	Batch #: 1		N	Matrix: S	oil	
Reporting Units: mg/kg	MATH	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300 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: 02/2	8/2014	А	nalyst: A	MB	
QC- Sample ID: 480223-001 S	Batch #: 1		N	Matrix: S	olid	
Reporting Units: mg/kg	MATH	MATRIX / MATRIX SPIKE RECOVERY STUDY				DY
Inorganic Anions by EPA 300 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 $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference $[E] = 200^{\circ}(C-A)/(C+B)$ All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



Sample Duplicate Recovery



Project Name: Lea to Jal 8" Line 1 Pump

Work Order # 480287

Lab Batch #: 935240			Project I	D: SRS# 20	14-014
Date Analyzed: 03/03/2014 09:50 D	ate Prepared: 03/03/2014	4 Anal	yst: WRU		
QC- Sample ID: 480223-001 D	Batch #: 1	Mat	rix: Solid		
Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	5.62	6.55	15	20	
Lab Batch #: 935240					
Date Analyzed: 03/03/2014 09:50 D:	ate Prepared: 03/03/2014	4 Anal	yst: WRU		
QC- Sample ID: 480308-001 D	Batch #: 1	Mat	rix: Soil		
Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	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 Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 02/27/2014 11:45:00 AM Temperature Measuring device used : Work Order #: 480287 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: Mrs. Horak Kelsey Brooks Checklist reviewed by: Mrs. Horak Kelsey Brooks

Date: 02/28/2014

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: AZ00989): 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



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

Certificate of Analysis Summary 484611 PLAINS ALL AMERICAN EH&S, Midland, TX Project Name: Lea to Jal 8" Line 1 Pump



Date Received in Lab: Sat May-03-14 02:00 pm

oject Location: NM				Report Date: Project Manager:	09-MAY-14 Kelsev Brooks
	Lab Id:	484611-002	484611-004		
	Field Id:	E. Wall #2b	S. Wall b		
Analysis Kequesiea	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		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing. Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kelsey Brooks Project Manager Arriga M

Proje

Final 1.001



Project Name: Lea to Jal 8" Line 1 Pump

Work Or Lab Batch	rders: 48461 #: 940111	11, Sample: 484611-002 / SMP	Batch:	Project ID	: SRS #2014-	-014	
Units:	mg/kg	Date Analyzed: 05/05/14 14:48	SUR	ROGATE R	RECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene	J	0.0258	0.0300	86	80-120	
4-Bromoflu	iorobenzene		0.0293	0.0300	98	80-120	
Lab Batch	#: 940111	Sample: 484611-004 / SMP	Batch:	1 Matrix	c: Soil	00-120	
Units:	mg/kg	Date Analyzed: 05/05/14 15:05	SUR	ROGATE R	RECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0248	0.0300	83	80-120	
4-Bromoflu	lorobenzene		0.0279	0.0300	93	80-120	
Lab Batch	#: 940137	Sample: 484611-002 / SMP	Batch:	1 Matrix	c: Soil	00-120	
Units:	mg/kg	Date Analyzed: 05/05/14 16:24	SUR	ROGATE R	RECOVERY	STUDY	
	ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	tane		103	00.0	103	70.135	
o-Terpheny	d		48.0	50.0	105	70-135	
Lah Batch	#• 940137	Sample: 484611-004 / SMP	40.0 Batch:	1 Matrix	90	70-133	
Uniter	malka	Date Apply 2010 05/05/14 17:12	Datti.	i Matrix	. 501		
Units:	mg/kg	Date Analyzed: 05/05/14 17:15	SUR	ROGATE R	RECOVERY	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	tane		104	99.9	104	70-135	
o-Terpheny	rl		48.8	50.0	98	70-135	
Lab Batch	#: 940111	Sample: 654955-1-BLK / BLI	K Batch:	1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 05/05/14 12:02	SUR	ROGATE R	RECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0261	0.0300	87	80-120	
4-Bromoflu	orobenzene		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.



Project Name: Lea to Jal 8" Line 1 Pump

Work O Lab Batcl	rders: 48461 h #: 940111	1, Sample: 484293-001 S / MS	Bate	Project ID	: SRS #2014	-014	
Units:	mg/kg	Date Analyzed: 05/05/14 12:52	su	RROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	robenzene		0.0300	0.0300	100	80-120	
4-Bromofl	uorobenzene		0.0342	0.0300	114	80-120	
Lab Batch	n #: 940137	Sample: 484611-004 S / MS	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 05/05/14 18:00	SU	RROGATE R	ECOVERY	STUDY	
	TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorood	stane		120	99.9	120	70-135	
o-Terpheny	yl		62.8	50.0	126	70-135	
Lab Batch	n#: 940111	Sample: 484293-001 SD / M	ISD Bate	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 05/05/14 13:08	SU	RROGATE R	ECOVERY	STUDY	
	BTE	K by EPA 8021B	Amount Found [A]	True Amount B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	robenzene		0.0298	0.0300	99	80-120	
4-Bromofle	uorobenzene		0.0346	0.0300	115	80-120	
Lab Batch	n#: 940137	Sample: 484611-004 SD / M	ISD Bate	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 05/05/14 18:24	SU	RROGATE R	ECOVERY	STUDY	
	TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1 Chlores	tana	Analytes	110	00.0	101	70.125	
a Tamb	d		110	99.8	110	70-135	
0-1 erpneny	yı		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





Control Con	Blk. Spk	Blank	Spike	Blank	Blank	Spike	Blank	78015 Mod	TPH Bv SW	
ECOVERY STUDY	LICATE R	SPIKE DUP	BLANK S	SPIKE / 1	K/BLANK	BLAN			mg/kg	Units:
latrix: Solid	N				h#: 1	Batc	KS	Sample: 654969-1-B	ID: 940137	Lab Batch
lyzed: 05/05/2014	Date Ans			14	ed: 05/05/20	ate Prepar	D		ARM	Analyst:
et ID: SRS #2014-014	Proje								der #: 484611	Work Or

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

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

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Form 3 - MS / MSD Recoveries





Work Order #:	484611	
Lab Batch ID:	940111	
Date Analyzed:	05/05/2014	
Reporting Units:	mg/kg	

Project ID: SRS #2014-014

Matrix: Soil

-

Batch #:

QC- Sample ID: 484293-001 S Date Prepared: 05/05/2014 MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analyst: ARM

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
<0.00139	0.139	0.133	96	0.139	0.130	94	2	70-130	35	
<0.00278	0.139	0.134	96	0.139	0.131	94	2	70-130	35	
<0.00139	0.139	0.143	103	0.139	0.140	101	2	71-129	35	
<0.00278	0.278	0.296	106	0.278	0.289	104	2	70-135	35	
<0.00139	0.139	0.147	106	0.139	0.144	104	2	71-133	35	
QC- Sample ID:	484611-	004 S	Ba	tch #:	1 Matrix	c: Soil				
Date Prepared:	05/05/20	014	An	alyst: A	RM					
	M	ATRIX SPIKI	E/MAT	RIX SPI	KE DUPLICA'	TE REC	OVERY	STUDY		
Parent Sample	Spike	Spiked Sample Result	Spiked	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Result [A]	Added [B]	[C]	%R	Added [E]	Result [F]	%R [G]	%	%0K	%RPD	0
	Sample Sample Result [A] [A] <0.00139	Sample Sample Spike Result Added [A] [B] Added [A] [B] [B] <0.00139	Sample Spike Result Result Result IBJ IBJ ICI [A] [B] [B] [C] [C] [C] <0.00139	Sample Spike Result Sample Spike Result Sample Spike Result Sample Spike Result Sample Sample Spike Result Sample Spiked Spiked						

35 35

70-135 70-135

10 12

80 95

1020 1100

1160 1160

107 67

1130 1240

1160 1160

<17.4 <17.4

C6-C12 Gasoline Range Hydrocarbons C12-C28 Diesel Range Hydrocarbons Matrix Spike Percent Recovery [D] = 100*(C-A)/B Relative Percent Difference RPD = 200*((C-F)/(C+F))

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.

Final 1.001

Page 13 of 16

Houston: 4143 Greenbriar	Dr. Stafford, 1	TX 77477 (281)	240-4200 0	Masa 1260	0 Wast Lon E	ant Orlangs	TX 70785	1971E89_1800						and designed
footi-c								136/300-1000	LAB W Field billa	.0 # : ble Hrs :	5		VC Vial Clear TS Tel VP Vial Pre-preserved AC Air GA Glass Amber TB Te GC Glass Clear 218 ZF PA Plastic Amber PC PI	radione Sampler Canister filsr Bag Lock Bag still Clear
sin Environmental Service Techr	nologies, LL(0	Phone: (5	75)396-237	B TAT	Work D	Q= SAR	Need resu	Its by:		Time:		PC Plastic Clear Other	1
00 Plains Hwy.			Fax: (5	75)396-142	6	Std	He (ar-s	s 1D 2D	3D 4D 5D 7C	0 10D 14D	Other		Size(s): 202, 402, 802, 1602, 3202 , 40ml, 125 ml, 250 ml, 500 ml, 1L, (Gal
vington		State: NM	Zip: 86	3260			1	ANAL	YSES REQU	UESTED		Constant of	** Preservative Typ	e Codes
in Arguija		Email:	bjarguijo@be	asinenv.com	Cont T	Pet GG	GC	GC					A None E. HCL I. ke	
ea to Jai 8" Line 1 Pump RS #2014-014			PO#: P/	AA-C. Bryant	Pres T)	1 20	-	-					D. Nach H. Nach J. Mc H3SO, G. Na,S2O, K. ZhAd D. Nach H. NaHSO, L. As	NaOH c Add&NaOH
amille Bryant Plains All Amer	rican		Quote #:		000	007						HAG N	A Matrix Type (odes
Hole Labora	Circle One I Semi-Annua	Event: Daty I Annual N	Weekly M	onthly Qua	Biqme	Hd	XƏT	əbino				hqme2 b	GW Ground Water S Soll WW Waste Water W Wip DW Drinking Water A Air	Sediment/Solid
Sample ID	Collect Date	Collect Time	Matrix B	OK (A/A) jureduty Filtered	containers EXE		.8	ЧЭ				(CALL_)	SW Surface Water O OI OW OccentSon Water T Tass PL Product-Liquid U Unin PS Product-Solid B Bloo	9
					#0	ont Lab O	nly Lab Only					10	REMARK	
E. Wall #1b	5/1/2014	1120	0		+	×	×	×					Eawn ples	3
E. Wall #2b	5/1/2014	1100	S		-	×	×	×					Concelet	per
Floor #1b	5/1/2014	1125	s		+	×	×	*					Ben Argui	Q
S. Wall b	5/1/2014	1130	s		-	×	×	×				1	Nin	2
									_				RI.	
												The second		
					1	and the second								
						and the second								
						and the								
Program / Clean-up Std	STATE	for Certs & I	Regs	QA/QC L	evel & Cei	tification		EDDs	COC & La	beis 0	colers Ter	So De du	Lab Use Only	ES NO NIA
DW NPDES LPST Drych	FL TX GA P	IC SC NI PA	OK LA	2 3 4 BODE	CLP AFCEE	QAPP	ADaPT XLS Othe	SEDD ERPI	Match Incor Absent Ur	nplete 1 SC	211.	08-11	Non-Conformances found? Samples intect upon arrival?	
Relinquished by	01	Affiliati	uo	Date	(Time	24	ceived by	Affilation	on Da	tte	Time	Received on Wet Ice? Labeled with proper preservatives?	
1. B. Walnut	3	BASis	>	1-2-5	X	2	100	2 Maso	Xox Xox	200	1 47	4100	Received within holding time? Custody seals intact? VCCs racit with heartwares?	
			H										Proper containers used? pH verified-acceptable, excl VOCs? Received on time to meet HTs?	
					-		_							

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

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81 to 21 apeq
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: AZ00989): Arizona (AZ0758)



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



Project Id: SRS #2014-014

Certificate of Analysis Summary 485087 PLAINS ALL AMERICAN EH&S, Midland, TX Project Name: Lea to Jal 8" Line 1 Pump



Date Received in Lab: Fri May-09-14 03:30 pm

roject Location: NM				Report Date:	16-MAY-14
				Project Manager:	Kelsey Brooks
	Lab Id:	485087-002	485087-004		
Ambreic Donnochod	Field Id:	E. Wall #1b	Floor #1b		
naisanhay sistinuy	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	Extracted:	May-14-14 15:04	May-14-14 15:04		
SUB: E871002	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		

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

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

Kelsey Brooks Project Manager

Murs Roah

Final 1.000



Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Ore Lab Batch #	ders : 48508 #: 940764	37, Sample: 485087-002 / SMP	Batch	Project ID	: SRS #2014- : Soil	014	
Units:	mg/kg	Date Analyzed: 05/13/14 22:13	SU	RROGATE R	ECOVERY	STUDY	
	TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ine		112	8 00	112	70-135	
o-Terphenyl			59.9	49.9	120	70-135	
Lab Batch #	#: 940764	Sample: 485087-004 / SMP	Batch	1: Matrix	: Soil	70-155	
Units:	mg/kg	Date Analyzed: 05/14/14 09:19	SU	RROGATE R	ECOVERY	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ine		130	99.9	130	70-135	
o-Terphenyl			62.9	50.0	126	70-135	
Lab Batch #	#: 941010	Sample: 485087-002 / SMP	Batch	n: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 05/15/14 08:00	SU	RROGATE R	ECOVERY S	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorot	benzene		0.0257	0.0300	86	80-120	
4-Bromofluo	robenzene		0.0279	0.0300	93	80-120	
Lab Batch #	#: 941010	Sample: 485087-004 / SMP	Batch	a: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 05/15/14 08:17	SU	RROGATE R	ECOVERY S	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorol	benzene		0.0265	0.0300	88	80-120	
4-Bromofluo	robenzene		0.0287	0.0300	96	80-120	
Lab Batch #	#: 940764	Sample: 655345-1-BLK / BL	K Batch	n: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 05/13/14 07:35	SU	RROGATE R	ECOVERY S	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ine		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 O	rders: 48508	87, Sample: 485145-001 S / MS	Bate	Project ID	: SRS #2014	-014	
Units:	mg/kg	Date Analyzed: 05/13/14 09:15	SU	RROGATE R	ECOVERY	STUDY	
	TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	tane		124	99.8	124	70-135	
o-Terpheny	/1		46.7	49.9	94	70-135	_
Lab Batch	#: 941010	Sample: 484890-008 S / MS	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 05/15/14 05:15	SU	RROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0288	0.0300	96	80-120	
4-Bromoflu	iorobenzene		0.0337	0.0300	112	80-120	
Lab Batch	#: 940764	Sample: 485145-001 SD / M	ISD Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 05/13/14 09:41	SU	RROGATE R	ECOVERY	STUDY	
	TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	tane		110	99.7	110	70-135	
o-Terpheny	rl		44.0	49.9	88	70-135	
Lab Batch	#: 941010	Sample: 484890-008 SD / M	ISD Batcl	h: 1 Matrix	: Soil	70-155	
Units:	mg/kg	Date Analyzed: 05/15/14 05:32	SU	RROGATE R	ECOVERY	STUDY	
	BTE	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0286	0.0300	95	80-120	
4-Bromoflu	iorobenzene		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.

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BS / BSD Recoveries





Project ID: SRS #2014-014

Project Name: Lea to Jal 8" Line 1 Pump

Work Order	*#: 485087								Proj	ect ID: 2	0-4107# SN	-
Analyst:	AKM		Da	te Prepare	d: 05/14/20	4			Date AI	alyzed: 0	5/15/2014	
Lab Batch ID:	: 941010	Sample: 655495-1-BKS		Batch	#: 1					Matrix: S	olid	
Units:	mg/kg			BLAN	K/BLANK	SPIKE / I	SLANK S	PIKE DUPL	ICATE 1	RECOVE	RY STUDY	2
	BTEX by EPA 80	021B Sam	Blank ple Result	Spike	Blank Spike	Blank Spike	Spike	Blank Spike	Blk. Spk Dup.	RPD	Control Limits	0-

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	80	70-130	35	
Ethylbenzene	<0.00100	0.100	0.108	108	0.100	0.0993	66	8	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.221	111	0.200	0.203	102	80	70-135	35	
o-Xylene	<0.00100	0.100	0.112	112	0.100	0.104	104	7	71-133	35	
Analyst: ARM	Da	ite Preparo	ed: 05/12/201	4			Date Ar	alyzed: (05/13/2014		
Lab Batch ID: 940764 Sample: 655345-1-F	BKS	Batch	1 #: 1					Matrix: S	Solid		
Jnits: mg/kg		BLAN	K/BLANK S	SPIKE / H	3LANK S	SPIKE DUPI	LICATE 1	RECOVI	ERY STUD	X	
TPH By SW8015 Mod	Blank Sample Result	Spike Added	Blank Spike	Blank Spike	Spike Added	Blank Spike	Blk. Spk Dup.	RPD	Control Limits	Control Limits	Flag
Analytes		[B]	[C]	[D]	E	Duplicate Result [F]	%K	%	%°K	%RPD	

35 35

70-135 70-135

10 5

96 103

959 1030

1000 1000

106 110

1060 1100

1000 1000

<15.0 <15.0

C6-C12 Gasoline Range Hydrocarbons C12-C28 Diesel Range Hydrocarbons

Analytes

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

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Final 1.000



Form 3 - MS / MSD Recoveries





Lab Ratch ID:	940764	OC-Sample ID-	4X5145	S 100	Raf	·# 40	Ň	atriv. Sc	10		
Lab Dawn ID.		Co- Dampic ID.	CET COL	0 100	Dat		TAT	TITY OF	110		
Date Analyzed:	05/13/2014	Date Prenared:	05/12/2	014	Ans	alvet:	NRM				
		in a unda a statut									
Reporting Units:	mg/kg		Σ	ATRIX SPIKI	C/MATE	IX SPI	KE DUPLI	CATE I	RECOV	FRVS	TIDV
0	,										-
	TPH RV SW8015 Mod	Parent		Spiked Sample	Spiked		Duplicat	e Spil	ked		Contr
	notes crocked for the t	Sample	Spike	Result	Sample	Spike	Spiked Sam	iple Du	up.	RPD	Limit
		Result	Addad	5	0/0	Addad	Docult IE	70	0	0/	0/0

rol Flag			
Cont Lim %RI	35	35	
Control Limits %R	70-135	70-135	
RPD %	1	4	
Spiked Dup. %R [G]	92	06	
Duplicate Spiked Sample Result [F]	918	959	
Spike Added [E]	166	166	
Spiked Sample %R [D]	93	94	
Spiked Sample Result [C]	927	7997	
Spike Added [B]	866	866	
Parent Sample Result [A]	<15.0	57.6	
TPH By SW8015 Mod Analytes	C6-C12 Gasoline Range Hydrocarbons	C12-C28 Diesel Range Hydrocarbons	

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

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.

Final 1.000

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* Container Type Codes	VX VIII Annoer Es Encore Sampler VC VIII Clear TS TerraCore Sampler GA Calas Annoer TS TerraCore Sampler GA Calass Annoer TS Tedar Bag PR Plastic Annoer PC Plastic Clear	PC Plastic Clear Other	Size(s) 20z. 40z. 80z. 160z, 320z. 1 6al 40ml 125 ml. 250 ml. 500 ml. 1L. Other	** Preservative Type Codes	A None E.HCL I tee	B. HNUS, F. MACH J. MCAA C. H ₃ SO4, G. Na ₃ S ₃ O ₃ , K. ZhAc&NaOH D. NaOH H. NaHSO ₄ , L. Asbc Acid&NaOH	A Matrix Type Codes	GW Ground Water S Soul/Sedimen/Solid WW Waste Water W Wipe DW Drinking Water A Air	SW Staffoe Water O Oll SW School Water T Tissue PL Product-Leguid U Unine St Studie SL Studie	REMARKS											Lab Use Orly YES NO N/A Non-Conformation found?	Received on Wet Ice?	Labeled with proper preservatives?	Custody seals intact? VOCa racid with headspace?	Proper containes used? pH verified acceptable, and VOCa? Received on time to meet HTs?	C.O.C. Serial #
1 of 1	Z18608	Time:	14D Other	ED			el HAG m	gmað b	Hol (CALL_)												Coolers Temp °C	Date Time	5-8-14 \$9:43	5/2/14 15:30	-	oenix 602-437-0330 3-8099
Page	LAB W.O#: Field billable Hrs	by:	0 4D 5D 7D 10D	SES REQUESTI									1	*							COC & Labels Match troomplete	Affiliation	ms :	S Xenco S		210-509-3334 Ph.
Q	79765 (432)563-1800	= D Need results	D) 5Hrs 1D 2D 3C	ANALYS	GC GC	-		loride	CPI	Lab Only:	××	××								_	EDDs ADaPT SEDD ERPIMS	Received by	alness 1. V	Unrowalia		3-1800 San Antonio 610-955-5649 Sou
DY RECOR	est I-20 East Odessa, TX	TAT Work-Days	Std (5-7		Cont Type ' GC	Pres Type**	560	Hd. 8 Åq s ejdus	elihsioV T	# Cont Lab Only	×	×	and the second se		12000						d & Certification AFCEE OAPP	Time	Q:43		-	0 Odessa 432-56. 8099 Philadelphia
F CUSTO	00 Odessa: 12600 We	(575)398-2378	(575)396-1429	88260	jo@basinenv.com	PAA-C. Bryant	**	y Monthly Quartely	 × < blat Flat blat 		1	-									QA/QC Leve	Date	5-8-14			ston 281-242-420 5 Tampa 803-543-
CHAIN O	TX 77477 (281)240-42	C Phone	Fax:	State: NM Zip:	Email: bjargul	PO#:	Quote	Event: Daily Weekl	Collect Matri Time Code		440 S	445 S									c for Certs & Regs	Affiliation	Basine			14-902-0300 Hou and 863-646-8526
	Greenbriar Dr. Stafford	rice Technologies, Ll					s All American	Circle One	Collect		5/7/2014	5/7/2014									tid STATE	by Participation	Kon X			92-7550 Dallas 2 70-449-8800 Lake
ENCO	oratorics poole	ny: Basin Environmental Serv	5: 3100 Plains Hwy.	Lovington	1: Ben Arguijo	ID: Lea to Jal 8" Line 1 Pump SRS #2014-014	To: Camile Bryant Plains	policipature: Alacha	Sample ID	A REAL PROPERTY AND	E. Wall #1b	Floor #1b									Reg. Program / Clean-up S TRRP DW NPDES LPST DI	Relinquished	Kaldon K Blan	1		.aboratories: Hobbs 575-3 ervice Centers: Atlanta 77
2	100	Compa	Addres	City:	PM/Attr	Project	Invoice	Sample	# eldm	BS	-	2	3	4	5	9	7	8	6	0	CTLS	- Internet	1	2	en *	FTS S

Execution of this document by client creates a legal and binding agreement between client and Xenco for analytical and testing services provided by Xenco to client under Xenco's standard terms and conditions unless previously agreed in writing. Terms of payment are Net 30 days, and all post due amounts shall according to the Xenco's standard terms are paid in full. All laboratory analytical data and reports generated by Xenco remain the exclusive property of Xenco until involces for such data are paid in full.

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XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 05/09/2014 03:30:00 PM **Temperature Measuring device used :** Work Order #: 485087

Sample Receipt Checklist Comments 7 #1 *Temperature of cooler(s)? #2 *Shipping container in good condition? Yes Yes #3 *Samples received on ice? #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:

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U	a	Ð	е	



Sample Duplicate Recovery



Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 485087

Lab Batch #: 940896			Project I	D: SRS #20	14-014
Date Analyzed: 05/14/2014 12:45 Date P	repared: 05/14/2014	Ana	lyst: WRU		
QC- Sample ID: 484890-002 D	Batch #: 1	Mat	rix: Soil		
Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture 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 P	repared: 05/14/2014	Ana	lyst: WRU		
QC- Sample ID: 484957-003 D	Batch #: 1	Mat	rix: Soil		
Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture 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

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Form 3 - MS / MSD Recoveries

Project Name: Lea to Jal 8" Line 1 Pump



Project ID: SRS #2014-014

Matrix: Soil

-

Batch #:

Analyst: ARM

QC-Sample ID: 484890-008 S Date Prepared: 05/14/2014

05/15/2014 941010 485087

> Date Analyzed: Lab Batch ID:

Work Order #:

Reporting Units: mg/kg		N	IATRIX SPIKI	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	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-Xylenc	<0.00110	0.110	0.104	95	0.111	0.105	95	-	71-133	35	
Lab Batch ID: 941001	QC- Sample ID:	484882	-020 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed: 05/15/2014	Date Prepared:	05/14/2	014	An	alyst: I	DEP					
Reporting Units: mg/kg		N	IATRIX SPIKI	E/MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorganic Anions by EPA 300/300.1 Analytes	I 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. [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1050	817	1870	100	817	1850	98	-	80-120	20	
Lab Batch ID: 941001	QC- Sample ID:	485059	-003 S	Ba	tch #:	1 Matrix	K: Soil				
Date Analyzed: 05/15/2014	Date Prepared:	05/14/2	014	An	alyst: I	DEP					
Reporting Units: mg/kg		N	IATRIX SPIKI	E/MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorganic Anions by EPA 300/300.1	l Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	[V]	[B]	2	[D]	[E]	I I I I I I I I I I I I I I I I I I I	[6]	0/	NO/	/INIO/	

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

Chloride

a 96

20

80-120

2

66

3500

2050

3440

2050

1480

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

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Blank Spike Recovery



Project Name: Lea to Jal 8" Line 1 Pump

Work Order #:	485087				Project II):	SR	S #2014-01
Lab Batch #:	941001		Sample: 655484	-1-BKS	Matri	x: Solid		
Date Analyzed:	05/14/2014	Date	Prepared: 05/14/2	014	Analys	t: DEP		
Reporting Units:	mg/kg		Batch #: 1	BLANK /	BLANK SP	IKE REC	COVERY S	STUDY
Inorga	nic Anions by EPA	300/300.1	Blank Result	Spike Added	Blank Spike	Blank Spike	Control Limits	Flags
	Analytes		[A]	[B]	Result [C]	%R [D]	%R	
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 ID: SRS #2014-014

Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 48508 Lab Batch #: 941010	7, Sample: 655495-1-BLK / B	LK Bate	Project ID h: 1 Matrix	: SRS #2014- : Solid	-014	
Units: mg/kg	Date Analyzed: 05/15/14 04:26	SU	RROGATE R	ECOVERY S	STUDY	
BTE	X 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		0.0288	0.0300	96	80-120	
Lab Batch #: 940764	Sample: 655345-1-BKS / B	KS Bate	h: 1 Matrix	: Solid		
Units: mg/kg	Date Analyzed: 05/13/14 07:57	SU	RROGATE R	ECOVERY	STUDY	
TPH	By SW8015 Mod Analytes	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 / B	KS Bate	h: 1 Matrix	: Solid		
Units: mg/kg	Date Analyzed: 05/15/14 04:43	SU	RROGATE R	ECOVERY	STUDY	
BTE	X 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		0.0328	0.0300	109	80-120	
Lab Batch #: 940764	Sample: 655345-1-BSD / B	SD Bate	h: 1 Matrix	: Solid		
Units: mg/kg	Date Analyzed: 05/13/14 08:23	SU	RROGATE R	ECOVERY	STUDY	
TPH	By SW8015 Mod Analytes	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 / B	SD Bate	h: 1 Matrix	: Solid		
Units: mg/kg	Date Analyzed: 05/15/14 04:59	SU	RROGATE R	ECOVERY	STUDY	
BTE	X 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		0.0333	0.0200	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

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(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	A SHARE AND ALL SHOULD

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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): 485087 Report Date: 16-MAY-14 Date Received: 05/09/2014

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.

mrshoah

Kelsey Brooks Project Manager

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XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 05/03/2014 02:00:00 PM Temperature Measuring device used : Work Order #: 484611

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: Keisey Brooks Checklist reviewed by: Keisey Brooks Keisey Brooks

Date: 05/05/2014

Date: 05/05/2014



Sample Duplicate Recovery



Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 484611

Lab Batch #: 940172			Project I	D: SRS #20	14-014
Date Analyzed: 05/06/2014 12:05 Date Prepa	red: 05/06/2014	Anal	yst: WRU		
QC- Sample ID: 484549-002 D Bate	h #: 1	Mat	rix: Soil		
Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	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 Prepa	red: 05/06/2014	Anal	yst: WRU		
QC- Sample ID: 484611-004 D Bate	h #: 1	Mat	rix: Soil		
Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	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

XENCO Laboratories	Form 3 Project Name: L	6 - MS ea to Jal	Recov 8" Line	v eries e 1 Pump		C	
Work Order #: 484611							
Lab Batch #: 940395				Proje	ect ID: S	RS #2014-01	4
Date Analyzed: 05/07/2014	Date Pre	pared: 05/0	7/2014	А	nalyst: J	UM	
QC- Sample ID: 484549-001 S	Ba	atch #: 1		N	Matrix: S	oil	
Reporting Units: mg/kg		MATI	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA a	300	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 Pre	pared: 05/0	8/2014	А	nalyst: J	UM	
QC- Sample ID: 484858-003 S	Ba	atch #: 1		M	Matrix: S	loil	
Reporting Units: mg/kg		MAT	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA	300	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] = $100^{\circ}(C-A)/B$ Relative Percent Difference [E] = $200^{\circ}(C-A)/(C+B)$ All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

0	S
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BS / BSD Recoveries



SRS #2014-014

05/05/2014

Solid

Project Name: Lea to Jal 8" Line 1 Pump

	BIL Col	Blank	Caller	Dlanb	Blank	Cuiba	Blank	GICUS Y	DTEV h FD	
RECO	LICATE	SPIKE DUP	BLANK	SPIKE / I	K /BLANK	BLAN			mg/kg	Units:
Matrix					h#: 1	Batc	KS	Sample: 654955-1-B	ID: 940111	Lab Batch]
nalyzed	Date A			4	ed: 05/05/201	Date Prepar			ARM	Analyst:
ject ID:	Pro								ler #: 484611	Work Ord

Units:	mg/kg		BLAN	K /BLANK	SPIKE / I	3LANK S	SPIKE DUP	LICATE	RECOV	ERY STUE	Y	
An	BTEX by EPA 8021B alytes	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
Benze	ne	<0.00100	0.100	0.101	101	0.100	0.102	102	1	70-130	35	
Toluer	1e	<0.00200	0.100	0.101	101	0.100	0.102	102	-	70-130	35	
Ethylb	enzene	<0.00100	0.100	0.108	108	0.100	0.110	110	2	71-129	35	
m,p-X	ylenes	<0.00200	0.200	0.223	112	0.200	0.227	114	2	70-135	35	
o-Xyle	the	<0.00100	0.100	0.112	112	0.100	0.114	114	2	71-133	35	
Analyst:	JUM	Da	ite Preparo	ed: 05/07/20	4			Date A	nalyzed: (05/07/2014		
Lab Batch	ID: 940395 Sample: 655134-1-	BKS	Batch	#: 1					Matrix:	Solid		
Units:	mg/kg		BLAN	K/BLANK	SPIKE / I	3LANK S	SPIKE DUP	LICATE	RECOV	ERY STUE	X	
Ino	rganic Anions by EPA 300/300.1	Blank Sample Result	Spike Added	Blank Spike	Blank Spike	Spike Added	Blank Spike	Blk. Spk Dup.	RPD	Control Limits	Control Limits	Flag
An	alvtes		[B]	[C]	[0]	[E]	Result [F]	16]	0/	No/	70 MLD	

20

80-120

2

100

50.2

[E] 50.0

86

49.0

[B] 50.0

<2.00

Analytes

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 Final



Form 2 - Surrogate Recoveries

Project Name: Lea to Jal 8" Line 1 Pump

Work Or Lab Batch	rders: 48461 #: 940137	11, Sample: 654969-1-BLK / B	LK Bate	Project ID h: 1 Matrix	: SRS #2014- : Solid	014	
Units:	mg/kg	Date Analyzed: 05/05/14 15:29	SU	RROGATE R	ECOVERY	STUDY	
	ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes					
1-Chlorooc	tane		112	100	112	70-135	
o-Terpheny	1		51.0	50.0	102	70-135	
Lab Batch	#: 940111	Sample: 654955-1-BKS / B	KS Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 05/05/14 12:18	SU	RROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluor	obenzene		0.0300	0.0300	100	80-120	
4-Bromoflu	orobenzene		0.0348	0.0300	116	80-120	
Lab Batch	#: 940137	Sample: 654969-1-BKS / B	KS Bate	h: 1 Matrix	: Solid	00120	
Units:	mg/kg	Date Analyzed: 05/05/14 18:47	SL	RROGATE R	ECOVERY	STUDY	
	ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooc	tane		113	100	113	70-135	
o-Terpheny	1		54.4	50.0	109	70-135	
Lab Batch	#: 940111	Sample: 654955-1-BSD / B	SD Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 05/05/14 12:35	SU	RROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0300	0.0300	100	80-120	
4-Bromoflu	orobenzene		0.0359	0.0300	120	80-120	
Lab Batch	#: 940137	Sample: 654969-1-BSD / B	SD Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 05/05/14 19:11	SU	RROGATE R	ECOVERY	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	tane	-	124	100	124	70-135	
o Tembonu	1			205.255			

* 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

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(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Final 1.001



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): 484611 Report Date: 09-MAY-14 Date Received: 05/03/2014

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.

mshoah

Kelsey Brooks Project Manager

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* Container Type Codes	VA Via Amber ES Encore Sampler VC Vial Choiar TS Tencore Sampler VP Vial Pre-preserved AC At Carister GA Gass Amber TB Tedar Bag CC Gass Cave ZB Zp Lock Bag PA Pastic Amber PC Plastic Clast	PC Plastic Clear Other	Stre(s): 202, 402, 803, 1602, 3202, 1Gal 40ml, 125 ml, 250 ml, 500 ml, 1L, Other	** Preservative Type Codes	A None E HCL I to	B, FINUS, F, MICH J, MICH J, MICH J, MICH J, MICH J, MICH J, MISJOL G, Nasysjos, C, ZAKENAOH D, NAOH H, NaHSO, L, Astc Acid8NaOH	A Matrix Type Codes	GW Ground Watter S SollSediment/Solid WW Vinste Watter W Wipe DW Drinking Watter A Ar	SW Surface Water D Oil DW Sourface Water T Tissue Pr. Product-Solid B Blood SL Studge Solid B Blood	REMARKS	(HSUR										Lab Use Only YES NO N/A	Non-Conformances found? Samptes intact upon anival?	Received on Wet Ico?	Labeled with proper preservatives? Received within holding time?	Custody seals intact? VOCs recid wio headspace?	Proper containers used? pH verified-acceptable, axid VDCs?	Received on time to meet HTs?	C.O.C. Serial #
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	0 # : 0 # : ble Hrs :	F	0 10D 14D Oth	UESTED						-											abets Coole	Inclear 1 2	on Date	Itel Darl	-14- 2		18818 CA	334 Phoenix 602 803-543-8099
	500 LAB W Field billa	esults by:	D3D 4D 5D 7C	ALYSES REQI																	COC & L	ERPIMS Match Inco Absent L	by Affiliat	contrad.	SCHOU MS		m xen	ntonio 210-509-3 South Carolina
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CHAIN O	IX 77477 (281)240-420	C Phone	Fax	State: NM Zip:	Email: bjargui	PO#:	Quote	Event: Daily Weekl	Collect Matri Time Code	and the second second	1610 S										for Certs & Regs	VC SC NJ PA OK 1	Affiliation	BushEnvi	(Jansis			4-902-0300 Hour
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	atorics yood-c	Basin Environmental Service	3100 Plains Hwy.	Lovington	Ben Arguijo	Lea to Jal 8" Line 1 Pump SRS #2014-014	Camille Bryant Plains A	ignature:	Sample ID		Release Point Floo										g. Program / Clean-up Std	RP DW NPDES LPST Dryc	Relinquished b	10 laves	time Our-	2		oratories: Hobbs 575-392 rice Centers: Atlanta 770.
2	Labor	Company:	Address:	City:	PM/Attn:	Project ID:	Invoice To:	Sampler Si	# əlqm	ES	-	2	3	4	5	9	7	80	6	0	Rei	CTLS TRR Other:	State of the second	-	2	3	4	FTS Serv

Revision Date: Nov 12, 2009 all past due amounts shall accure interest at 1.5% per month unit page in full. All laboratory analytical data and reports generated by Arkeno remain the accusive property of Xenco units involves for such data are paid in full.

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XENCO Laboratories

Form 3 - MS / MSD Recoveries





ID: 935252 QC- Sample ID:	vzed: 02/28/2014 Date Prepared:	Units: mg/kg	BTEX by EPA 8021B	Analytes [A]	0000
Work Order Lab Batch ID	Date Analyze	Reporting Un			Dama

Project ID: SRS# 2014-014

1 Matrix: Soil

Batch #:

479940-003 S 02/28/2014

Analyst: ARM

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Parent	Sniba	Spiked Sample	Spiked	Sniba	Duplicate Suited Sample	Spiked	uaa	Control Limite	Control Limite	Flao
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	0
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	68	1	71-129	35	
m_p-Xylenes	<0.00205	0.205	0.188	92	0.206	0.188	16	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	Ba	tch #:	1 Matrix	:: Soil				
Date Analyzed: 03/03/2014	Date Prepared	: 03/03/2	014	An	alyst: A	RM					
Reporting Units: mg/kg		M	ATRIX SPIKI	ITAM / 3	RIX SPI	CE DUPLICAT	FE RECO	OVERY S	STUDY		
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	Added [B]	[c]	%R	Added [E]	Result [F]	%R [G]	%	% ⁶ R	%RPD	

35

70-135

- 0

1150

1220

1140

1230

<18.4

C6-C12 Gasoline Range Hydrocarbons C12-C28 Diesel Range Hydrocarbons

93

99

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. Final 1.000

Page 14 of 17



BS / BSD Recoveries





Work Order	·#: 480287								Proje	ct ID: 5	SRS# 2014-	014	
Analyst:	ARM		Da	ite Prepare	d: 03/03/20	14			Date Ans	alyzed: 0	3/03/2014		
Lab Batch ID	: 935290 Sa	ample: 651853-1-F	SKS	Batch	#: 1				K	Matrix: S	Solid		
Units:	mg/kg			BLANK	K/BLANK	SPIKE / B	BLANK S	PIKE DUPI	LICATE R	ECOVI	ERY STUD	Y	
	TPH By SW8015 N	lod	Blank Samule Result	Spike	Blank Snike	Blank	Spike	Blank Snike	Blk. Spk	RPD	Control	Control Limits	Fla

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

	Project ID	: SRS# 2014-	-014	
MSD Batch	h: 1 Matrix	: Soil		
SU	RROGATE R	ECOVERY S	STUDY	
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
0.0291	0.0300	97	80-120	
0.0308	0.0300	103	80-120	
MSD Batch	h: 1 Matrix	: Soil		
SU	RROGATE R	ECOVERY S	STUDY	
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
103	99.8	103	70-135	
60.1	49.9	120	70-135	
	MSD Bate SU Amount Found [A] 0.0291 0.0308 MSD Bate SU Amount Found [A] 103 60.1	Project ID MSDBatch:IMatrixSURROGATE RAmount [A]Found [A]0.02910.03080.03080.03080.0308MSDBatch:IMatrixSURROGATE RAmount [A]Found [A]I10399.860.149.9	Project ID: SRS# 2014-MSDBatch:1Matrix:SoilSURROGATE RECOVERY SAmount [A]True (B]Recovery %R (D]0.02910.0300970.03080.0300103MSDBatch:1Matrix:SoilSURROGATE RECOVERY SAmount Found [A]True (B]Recovery %R (D]10399.810360.149.9120	Project ID: SRS# 2014-014 MSD Batch: 1 Matrix: Soil SURROGATE RECOVERY STUDY Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R 0.0291 0.0300 97 80-120 0.0308 0.0300 103 80-120 MSD Batch: 1 Matrix: Soil SURROGATE RECOVERY STUDY Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R 103 99.8 103 70-135 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.



Work Orders · 480287.

Form 2 - Surrogate Recoveries

Project ID: SRS# 2014-014

Project Name: Lea to Jal 8" Line 1 Pump

Lab Batch	#: 935252	Sample: 480287-001 / SMP	Batch	n: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 02/28/14 14:26	SU	RROGATE R	ECOVERY S	STUDY	
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluor	robenzene		0.0262	0.0300	87	80-120	
4-Bromoflu	iorobenzene		0.0273	0.0300	91	80-120	
Lab Batch	#: 935290	Sample: 480287-001 / SMP	Batc	a: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 03/03/14 13:39	SU	DBOCATE D	ECOVEDV	TUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	tane		112	99.9	112	70-135	
o-Terpheny	yl		54.6	50.0	109	70-135	
Lab Batch	#: 935252	Sample: 651837-1-BLK / Bl	LK Batel	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/28/14 12:33	SU	RROGATE R	ECOVERY S	STUDY	
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	robenzene		0.0271	0.0300	90	80-120	
4-Bromoflu	uorobenzene		0.0276	0.0300	92	80-120	
Lab Batch	#: 935290	Sample: 651853-1-BLK / Bl	LK Batcl	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 03/03/14 09:29	SU	RROGATE R	ECOVERY S	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorood	ctane		91.8	100	92	70-135	
o-Terpheny	yl		43.5	50.0	87	70-135	
Lab Batch	#: 935252	Sample: 651837-1-BKS / BI	KS Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/28/14 12:50	SU	RROGATE R	ECOVERY S	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	robenzene		0.0291	0.0300	97	80-120	
4-Bromofh	uorobenzene		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.



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

Certificate of Analysis Summary 480287 PLAINS ALL AMERICAN EH&S, Midland, TX Project Name: Lea to Jal 8" Line 1 Pump



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

roject Location: NM			Report Date: Project Manager:	03-MAK-14 Kelsey Brooks
	Lab Id:	480287-001		
Australia Damandad	Field Id:	Release Point Floor		
Anarysis nequesieu	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		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XFNCO Laboratories. XENCO Interpretations and results expressed throughout this analytical report represents the best judgment of XFNCO Laboratories. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

Murs Moah Kelsey Brooks Project Manager

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Final 1.000



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): 480287 Report Date: 03-MAR-14 Date Received: 02/27/2014

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None





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.

mis boah

Kelsey Brooks Project Manager Recipient of the Prestigi

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

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XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



 Client: PLAINS ALL AMERICAN EH&S
 Acceptable Temperature Range: 0 - 6 degC

 Date/ Time Received: 02/12/2014 03:30:00 PM
 Air and Metal samples Acceptable Range: Ambient

 Work Order #: 479262
 Temperature Measuring device used :

 Sample Receivet Checklist
 Comments

#1 *Temperature of cooler(s)?	2
#2 *Shipping container in good condition?	Vec
#2 Shipping container in good condition:	Vec
#3 "Samples received on ice?	Tes
#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: (unit damas

Ruriko Konuma

Date: 02/13/2014

Checklist reviewed by:

Kelsey Brooks

Date: 02/13/2014

Control End balance The control	Labe	Houston: 4143 Greenbriar D	r. Stafford, T	CHAIN	I OF	CUST(DUY I	RECOF	CT9765 (432)	63-1800	Ра	ge 1 of 3		* Container Typ VA Vial Amber ES E	e Codes core Sampler eraCore Sampler
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$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Compan	Y: Basin Environmental Service Techni	plogies, LLC	-	Phone: (575)396-237	TAT 8	Work Day	s=D Ne	ed results b	y:	Tin	ie:	Other	
Oliv Longen Start VSES RALVSES REQUESTED * Presentation PMM/II: Environgen Fille * Presentation **** C **** **** ***** ***** ****** ****** ******* ************************************	Address:	3100 Plains Hwy.			Fax: (575)396-142	6	Std (5-1	7D) 5Hrs 1	ID 2D 3D	4D (5D 7D) 10	ID 14D Other		Size(s): 202, 402, 802, 1602, 3202 40mi, 125 ml, 250 ml, 500 ml, 1L	1Gal Other
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	City:	Lovington		State: NM	Zip: 8	38260		and	and the second	ANALYSI	ES REQUE	STED	A COLUMN TO THE OWNER OF	** Preservative Ty	pe Codes
Project (E. is an βF Unit Fame Description (E. calle Byrat Part of Family (E. calle Byrat Part of F	PM/Attn:	Ben Arguijo		Email:	bjargujo@l	basinenv.com	Cont T VG	De CC	66	_				A. None E. HCL I. Io a UND E NACH I II	-
Monton Tic. Caratile Bignit Data Al American Confer Amountaine	Project II	D: Lea to Jal 8" Line 1 Pump SRS #2014-014			HO#:	PAA-C. Bryant	Pres 1	per-	H					D. NaOH H. NaHSO, L A	&NaOH sbc Acid&NaOH
Sample Signature Sample Sam	Invoice 1	o: Camille Bryant Plains All Ameri	can		Quote #:			092	7				el HAG n H YinO	A Matrix Type	Codes
the function of a first form of a fir	Sampler	Signature:	Circle One E Semi-Annual	Event: Daly Annual N	Weekty A	Monthly Qua	alqma	HH s a s	p: sol				Hd1 Idwes p	GW Ground Water S Sc WW Wastle Water W W DW Drinking Water A A	#Sedment/Solid
06 $4con$ con $acon$	# əldu	Sample ID	Collect Date	Collect Time	Matrix Code A	Prietod Filtered Prietod	containers EXE	T	42				Hol (CALL)	SW Surface Water 0 00 OW Occan/See Water 1 1t PU. Product-Hauld U U V PS Product-Solid B Ba	ne od
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6 F, Will H = 1035 1036 1030 10000 1000	5	E. 11/1/ #/		Deal											
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0 F/buil Ar/h P/buil Ar/h </td <td>6</td> <td>Flow Alth Floor HI</td> <td></td> <td>0401</td> <td></td> <td></td> <td></td> <td>0.00</td> <td>-</td> <td></td> <td></td> <td></td> <td>- Ann</td> <td></td> <td></td>	6	Flow Alth Floor HI		0401				0.00	-				- Ann		
Reg. Program / Clean-up Std STATE for Certs & Regs QA/QC Level & Certification EDDs COC & Labels Coolers Temp °C Lab Use Only CTLs TRRP DW NPDES LPST DyCin FL TX GA NC SC NL PA OK L 1 2 3 4 CLP AFCEE GAPP ADaPT SEDD ERPIMS Match Incomptee 1 2 0(2 3 4 5 5 7 Bampares bund? Other: Revent Votient 1 2 3 4 CLP AFCEE GAPP ADaPT SEDD ERPIMS Match Incomptee 1 2 0(2 3 4 5 5 7 Bampares bund? Other: Revent Votient 1 2 3 4 CLP AFCEE GAPP ADaPT SEDD ERPIMS Ansoln Incomptee 1 2 0(2 3 4 5 7 Bampares bund? Other: Revent Votient Votient 1 2 3 4 CLP AFCEE GAPP ADaPT SEDD ERPIMS Ansoln Incomptee 1 2 0(2 3 4 5 7 Bampares bund? Other: Revent Votient Votient 1 2 3 0 Votient 1 2 3 0 Votient Revent Votient and After Apon annual 1 Match Ansoln 1 4 7 30 Match Match Match Match Match Annual Poleneer a	0	Flow anth Floor Hd	7	5401	1			1)				and	1	
CTLs TRRP DW NPDES LPST Dy/Olive 1 2 3 CUL ADAPT SEDD RPIMS Match Noncomplete 1 2	8	eg. Program / Clean-up Std	STATE	for Certs & F	Regs	QAVQCL	evel & Ce	rtification	EC	Ds	COC & Label	s Coolers	Lemp °C 7	Lab Use Only	YES NO N/A
Relinquished by Affiliation Date Time Received by Affiliation Date Time Received on Wei tect 1 Mark Mark <td>CTLs TI Other:</td> <td>RP DW NPDES LPST DryCln</td> <td>FL TX GA N</td> <td>C SC NJ PA</td> <td>N IS</td> <td>1 2 3 4 IELAC DoD-E</td> <td>CLP AFCE</td> <td>E OAPP</td> <td>ADaPT SEL XLS Other:</td> <td>DD ERPIMS</td> <td>Match Incomplet Absent Unclear</td> <td>1 2.002</td> <td>3 45-7</td> <td>Non-Conformances found? Samples intact upon arrival?</td> <td>1</td>	CTLs TI Other:	RP DW NPDES LPST DryCln	FL TX GA N	C SC NJ PA	N IS	1 2 3 4 IELAC DoD-E	CLP AFCE	E OAPP	ADaPT SEL XLS Other:	DD ERPIMS	Match Incomplet Absent Unclear	1 2.002	3 45-7	Non-Conformances found? Samples intact upon arrival?	1
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	Relinquished by	ALC: NO	Affiliatio	uo	Date		Time	Rece	ved by	Affiliation	Date	Time	Received on Wet Ice?	K.
2 U XeVCC 2-13-14 U SeVCC	+	I and		Chym Env.		Pileile	/	530	Verl	alhase	MS	ゲート	15:30)	Labeled with proper preservatives? Received within holding time?	24
3 Proper containers used? Proper containers used? 2 Proper containers	2	111							The	M	KINCO	2-13-14	14:30	Curlody seals intact? VOCs rec'd wio headspace?	X
114 Menu (3 Mun (0 5044030)	3								1.					Proper containers used? pH verified-ecceptuble, excl VOCs?	
	4						_							Received on time to meet HEs?	

Execution of this document by cleant creates a legal and binding agreement between cleant and Xenco for analytical and tosting services provided by Xenco to client under Xenco's standard terms and conditions unless previously agreed in writing. Terms of payment are Net 30 days, and all past due amounts shall accrue interest at 1.5% per month until piel in full.

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Form 3 - MS / MSD Recoveries





: 479262	935044	: 02/26/2014	ts: mg/kg
Work Order #	Lab Batch ID:	Date Analyzed	Reporting Unit

Project ID: SRS #2014-014

Analyst: ARM Batch #: QC-Sample ID: 479262-001 S

Matrix: Solid -

Date Prepared: 02/26/2014

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

RTEV by EDA 2031R											
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	-	70-130	35	
Toluene	<0.00216	0.108	0.0804	74	0.108	0.0760	70	9	70-130	35	
Ethylbenzene	<0.00108	0.108	0.0837	78	0.108	0.0833	17	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	06	0	71-133	35	
Lab Batch ID: 934204	QC- Sample ID:	479262	-017 S	Ba	tch #:	1 Matrix	c: Solid				
Date Analyzed: 02/16/2014	Date Prepared:	02/14/2	014	An	alyst: A	RM					
Reporting Units: mg/kg		M	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added	[0]	%R	Added	Result [F]	%R	%	%R	%RPD	

35 35

21 24

103 III

1200 1300

1170 1170

83 87

1170 1170

<17.6 <17.6

C6-C12 Gasoline Range Hydrocarbons C12-C28 Diesel Range Hydrocarbons

1020 975

70-135 70-135

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.

Final 1.002

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-	
2	ŗ
	ate
W	5
X	2

BS / BSD Recoveries



4

Project Name: Lea to Jal 8" Line 1 Pump

Work Order #: 479262			Project ID: SRS #2014-01
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 S	SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anion Analytes	s by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Bik. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride		<2.00	50.0	49.4	66	50.0	49.6	66	0	80-120	20	
Analyst: ARM Lab Batch ID: 934204 Units: mg/kg	Sample: 651159-1-E	Da	te Prepared: Batch #: BLANK	: 02/14/2014 : 1 /BLANK S	4 PIKE / B	LANK S	PIKE DUPI	Date An	alyzed: 0 Matrix: S RECOVE	2/15/2014 Solid SRY STUE	X	

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[q]	[E]	Result [F]	[6]				
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 Final 1.002


Project Name: Lea to Jal 8" Line 1 Pump

Work Or Lab Batch	ders : 47926 #: 934204	52, Sample: 479262-017 S / MS	Batch:	Project ID	: SRS #2014- : Solid	014	
Units:	mg/kg	Date Analyzed: 02/16/14 08:41	SUR	ROGATE R	ECOVERY	STUDY	
	TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			נען		
1-Chloroocta	ane		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:	l Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/21/14 11:59	SUR	ROGATE R	ECOVERY S	STUDY	
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	benzene		0.0307	0.0300	102	80-120	
4-Bromofluc	orobenzene		0.0302	0.0300	101	80-120	
Lab Batch	#: 935044	Sample: 479262-001 S / MS	Batch:	1 Matrix	: Solid	00 120	
Units:	mg/kg	Date Analyzed: 02/26/14 19:49	SUR	ROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	benzene		0.0293	0.0300	98	80-120	
4-Bromofluc	orobenzene		0.0338	0.0300	113	80-120	
Lab Batch	#: 934204	Sample: 479262-017 SD / M	SD Batch:	1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/16/14 09:07	SUR	ROGATE R	ECOVERY	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ane		116	99.8	116	70-135	
o-Terphenyl			49.9	49.9	100	70-135	
Lab Batch	#: 935044	Sample: 479262-001 SD / M	SD Batch:	1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/26/14 20:05	SUR	ROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	benzene		0.0289	0.0300	96	80-120	
4-Bromofluc	orobenzene		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



Project Name: Lea to Jal 8" Line 1 Pump

Work Ord Lab Batch #:	ers: 47926 935044	2, Sample: 479262-011 / SMP	Batc	Project ID	: SRS #2014- : Solid	014	
Units:	mg/kg	Date Analyzed: 02/27/14 20:12	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluorobe	enzene		0.0266	0.0300	89	80-120	
4-Bromofluor	obenzene		0.0281	0.0300	94	80-120	
Lab Batch #:	934204	Sample: 651159-1-BLK / B)	LK Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/15/14 23:26	SU	RROGATE R	ECOVERY S	STUDY	
	TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctan	e		97.9	100	98	70-135	
o-Terphenyl			52.4	50.0	105	70-135	
Lab Batch #:	934572	Sample: 651408-1-BLK / B	LK Bate	h: Matrix	: Solid	10-155	
Units:	mg/kg	Date Analyzed: 02/21/14 12:47	SU	PROCATE P	FCOVERV	STUDY	
	0.0		50	KROGATE K	ECOVERT	STUDI	
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobe	enzene		0.0289	0.0300	96	80-120	
4-Bromofluor	obenzene		0.0266	0.0300	89	80-120	
Lab Batch #:	935044	Sample: 651698-1-BLK / B	LK Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/26/14 18:28	SU	RROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobe	enzene		0.0258	0.0300	86	80-120	
4-Bromofluor	obenzene		0.0280	0.0300	93	80-120	
Lab Batch #:	934204	Sample: 651159-1-BKS / Bl	KS Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/15/14 23:52	SU	RROGATE R	ECOVERY S	STUDY	
	TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctan	e		121	100	121	70-135	
						1	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Lea to Jal 8" Line 1 Pump

Work Orders : 479262, Lab Batch #: 934572 Sample: 479262-015 / SMP	Batc	h: Matrix	: SRS #2014- : Solid	-014	
Units: mg/kg Date Analyzed: 02/21/14 18:31	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	
Lab Batch #: 934572 Sample: 479262-016 / SMP	Batc	h: 1 Matrix	: Solid		
Units: mg/kg Date Analyzed: 02/21/14 18:47	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	
Lab Batch #: 934572 Sample: 479262-017 / SMP	Batc	h: 1 Matrix	: Solid		
Units: mg/kg Date Analyzed: 02/22/14 14:12	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	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	0.0307	0.0300	01	80.120	
ab Batch #: 934572 Sample: 479262-018 / SMP	Bate	h: Matrix	· Solid	80-120	
Unite: mg/kg Date Analyzed: 02/22/14 14:28	Date	DDOCLTE D	ECOVERV	OTHER !!	
Date Analyzed. 02/22/14 14.20	st	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	
Lab Batch #: 935044 Sample: 479262-001 / SMP	Batc	h: 1 Matrix	: Solid		
Units: mg/kg Date Analyzed: 02/26/14 20:36	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	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



Project Name: Lea to Jal 8" Line 1 Pump

Work Ord Lab Batch #	lers: 479262, : 934204	Sample: 479262-016 / SMP	Batc	Project ID	: SRS #2014- : Solid	014	
Units:	mg/kg	Date Analyzed: 02/16/14 07:50	SU	RROGATE R	ECOVERY S	STUDY	
	ТРН Ву	SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	А	nalytes			[D]		
1-Chlorooctar	ne		106	99.7	106	70-135	
o-Terphenyl			55.2	49.9	111	70-135	
Lab Batch #	: 934204	Sample: 479262-017 / SMP	Batc	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/16/14 08:15	SU	RROGATE R	ECOVERY S	STUDY	
	ТРН Ву	SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ne		117	99.6	117	70-135	
o-Terphenyl			62.4	49.8	125	70-135	
Lab Batch #	: 934204	Sample: 479262-018 / SMP	Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/16/14 09:34	SU	RROGATE R	ECOVERY	STUDY	
	ТРН Ву	SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ne		95.5	99.9	96	70-135	
o-Terphenyl			50.4	50.0	101	70-135	
Lab Batch #	: 934572	Sample: 479262-002 / SMP	Batc	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/21/14 15:11	SU	RROGATE R	ECOVERY	STUDY	
	BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorob	oenzene		0.0315	0.0300	105	80-120	
4-Bromofluor	robenzene		0.0291	0.0300	97	80-120	
Lab Batch #	: 934572	Sample: 479262-003 / SMP	Batc	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/21/14 15:27	su	RROGATE R	ECOVERY	STUDY	_
	BTEX	by EPA 8021B analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorob	benzene		0.0287	0.0300	96	80-120	
4. Bromofluor	ahanzana		0.02/5		-		

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Lea to Jal 8" Line 1 Pump

Work Ore Lab Batch #	lers : 479262, #: 934204	Sample: 479262-006 / SMP	Bate	Project ID h: 1 Matrix	: SRS #2014- : Solid	-014	
Units:	mg/kg	Date Analyzed: 02/16/14 02:50	SU	RROGATE R	ECOVERY	STUDY	
	ТРН Ву	SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	А	naiytes			[10]		
1-Chloroocta	ne		107	99.7	107	70-135	
o-Terphenyl	001001		53.1	49.9	106	70-135	
Lab Batch #	#: 934204	Sample: 4/9262-0077 SMP	Batc	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/16/14 03:15	SU	RROGATE R	ECOVERY	STUDY	
	ТРН Ву	SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ne		119	99.9	119	70-135	
o-Terphenyl			61.3	50.0	123	70-135	
Lab Batch #	t: 934204	Sample: 479262-008 / SMP	Batc	h: 1 Matrix	: Solid	1	
Units:	mg/kg	Date Analyzed: 02/16/14 03:40	SU	RROGATE R	ECOVERY	STUDY	
	ТРН Ву	SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ne		111	99.8	111	70-135	
o-Terphenyl			57.1	49.9	114	70-135	
Lab Batch #	t: 934204	Sample: 479262-009 / SMP	Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/16/14 04:05	su	RROGATE R	ECOVERY	STUDY	
	ТРН Ву	SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ne		116	99.9	116	70-135	
o-Terphenyl			58.6	50.0	117	70-135	
Lab Batch #	#: 934204	Sample: 479262-010 / SMP	Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/16/14 04:30	SU	RROGATE R	ECOVERY	STUDY	
	ТРН Ву	SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ne		113	99.9	113	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



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
- POL Practical Quantitation Limit MOL Method Quantitation Limit

DL Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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LOQ Limit of Quantitation

Ph

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(770) 449-8800	(770) 449-5477
(602) 437-0330	



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

Certificate of Analysis Summary 479262 PLAINS ALL AMERICAN EH&S, Midland, TX Project Name: Lea to Jal 8" Line 1 Pump



Date Received in Lab: Wed Feb-12-14 03:30 pm Report Date: 28-FFB-14

I OLON FORMANI TATA							
					Project Manager: 1	Kelsey Brooks	
	Lab Id:	479262-007	479262-008	479262-009	479262-010	479262-011	479262-012
Analusis Damadad	Field Id:	W Wall #1	W Wall #2	Flowpath Floor #1	Flowpath Floor #2	Flowpath N Wall	Flowpath S Wall
naisanhay sistinuy	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

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

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Kelsey Brooks Project Manager

Murs Moah



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





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.

mshoah

Kelsey Brooks Project Manager

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Company: Basin Ei Address: 3100 Pi: City: Lowincie			TINE TINE Y		The second secon		I AN Fair Adams	TV TOTAL IN	1000 4000	2	1	1	VA Visi Amber ES Eric VC Vial Clear TS Ten	aCon Semiler
Company: Basin Er Address: 3100 Pt City: Louiner	s proot-c			0025-060	Odessa: 12		H-20 East Odessa.	P) CO/R/ YI	0001-500(25	LAB W.O#	H	18301	VP Vial Pre-preserved AC Air GA Glass Amber TB Ted	Centister Lock Bay
Company: Basin Er Address: 3100 Pis City: Louinne										Field billable Hr	: 5	-	PA Plastic Amber PC Pt	stic Clear
Address: 3100 Pt	nvironmental Service Techn	ologies, LLC		Phone: (575)396-2	378	TAT Work Da	ys = D	Need results by	K.	F	ne:	Other	
City: Louinote	ains Hwy.			Fax: (575)396-1	429	Std (5	-7D) 5Hr	1D 2D 3D	4D 5D 7D 10D	14D Othe		Size(s) 202, 402, 802, 1602, 3202, 1 40ml, 125 ml, 250 ml, 500 ml, 1L, C	Gai
WELLAND .	ç		State: NM	Zip: 8	8260	1		and	ANALYSE	ES REQUEST	TED		** Preservative Typ	e Codes
PM/Attn: Ben Arg	ojin		Email:	Margujo@t	Dasinem .co	m	Cont Type ' GC	GC					A None E HCL L Ke	
Project ID: Lea to J SRS #20	al 8" Line 1 Pump 114-014			PO#:	AA-C. Bry	ant	Pres Type"	-					H, HNO, F, MECH J, MC H, SO, G Na, S, O, K, ZNAG D, NBOH H, NBHSO, L ASI	NaOH c Acid&NaOH
Invoice To: Camille	Bryant Plains All Amen	ican		Quote #:			09					HVd	o. A Matrix Type C	odes
Sampler Signature:	Slakin	Ercle One Er Semi-Annual	vent: Daily Annual N	Weekly N	Aonthiy Q	uartely	opide s py 82 epiole	t Filter				algme2 t 10A 2 40	GW Ground Water S Soli VVW Waste Water A W Wigh DW Drinking Water A Air	Sediment/Solid
# əlqm	Sample ID	Collect Date	Collect Time	Matrix Code ^	Filtered Filtered (V/V)	Total # of containers	Chiatiles Volatiles	nis9				(CALL_)	SW Surface Water 0 03 OW Occean/Sea Water 1 Tiss. Pr. Product-Liquid U Unno. PS. Product-Liquid U Unno. PS. Product-Solid B Bloor SL Studge	*
IBS	ALC: NO DE CONTRACTOR						# Cont Lab On	liy:					REMARK:	0
_1 Ste	ockpile	1/27/14	1000	s	-	+	×	×						
_2						-								
3														
4							14 10							
5														
9							and the second							
7					2		and the second							
8							The second							
6							and a second							
0							1.5							
Reg. Progra	m / Clean-up Std	STATE A	or Certs & F	seas	QAVQC	Level	& Certification		EDDs	COC & Labels	Cooler	s Temp & L	Lab Use Only	YES NO NIA
CTLs TRRP DW Other:	NPDES LPST DryCh	FL TX GA NC	SC NU PA	X IN	1 2 3 -	1 CLP	AFCEE CAPP	ADaPT XLS Other	SEDD ERPIMS	Match Incomplete Absent Uncloar	1 2	30	Non-Conformanoas found? Samples intact innon annual?	
and the second second	Relinquished by	and and	Affiliatio	uc l	Date	1000	Time	Re	ceived by	Affiliation	Date	Time	Received on Wet Ice?	
1 Salk	Klark unu	X			-82-1	14	4:23	erte	1 Lacor	SW	+38+4	4:23	Labeled with proper preservatives? Received within holding time?	
2 0													Custody seels intact? VOCs recit who headspace?	
3													Proper containers used? pH verified-acceptable, excl VOCa?	
4													Received on time to most HTs?	
B&A Laboratories	:: Hobbs 575-392-7550	Dallas 214	-902-0300	Houston	1 281-24	2-4200	Odessa 432-5	563-1800	San Antonio	210-509-3334 P	hoenix 602-	137-0330	C.O.C. Serial #	
FTS Service Cent Execution of this docume	ers: Atlanta 770-449-85 In by client creates a legal and bi	300 Lakelar Inding agreeme	nd 863-646 nt between clie	est and Xeno	to for analyti	-543-81 cal and te	199 Philadelph sting services provic	ia 610-95 ded by Xenco	5-5649 South to client under Xen	Carolina 803- co's standard terms a	543-8099 nd conditions uni	ass previously agreed	in writing. Terms of payment are N	et 30 days, and

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XENCO Laboratories Proje	Form 3 - MS ect Name: Lea to Jal	Recov 8" Lind	v eries e 1 Pump			
Work Order #: 478301						
Lab Batch #: 933037			Proje	ect ID: S	RS# 2014-01	4
Date Analyzed: 01/30/2014	Date Prepared: 01/3	0/2014	A	nalyst: A	MB	
QC- Sample ID: 478310-003 S	Batch #: 1		N	Matrix: S	oil	
Reporting Units: mg/kg	MATE	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300 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: 01/3	0/2014	А	nalyst: A	MB	
QC- Sample ID: 478312-001 S	Batch #: 1		Ν	Matrix: S	oil	
Reporting Units: mg/kg	MATE	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300 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] = $100^{\circ}(C-A)/B$ Relative Percent Difference [E] = $200^{\circ}(C-A)/(C+B)$ All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



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

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(602) 437-0330	

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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): 478301 Report Date: 04-FEB-14 Date Received: 01/28/2014

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





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.

wsboah

 Kelsey Brooks

 Project Manager

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Form 3 - MS / MSD Recoveries





Work Order # :	478290						Project II	D: SRS#	2014-014			
Lab Batch ID:	932998	QC- Sample ID:	478237-	001 S	Bat	ich #:	1 Matri	x: Soil				
Date Analyzed:	01/29/2014	Date Prepared:	01/29/20	114	An	alyst: A	RM					
Reporting Units:	mg/kg		M	ATRIX SPIK	E/MATI	RIX SPII	KE DUPLICA	TE REC	OVERY	STUDY		
	TPH By SW8015 Mod	Parent	Cniba	Spiked Sample	Spiked	Sniba	Duplicate Sniked Samula	Spiked	Udd	Control Limite	Control Limits	Flao
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
C6-C12 Gasolir	te Range Hydrocarbons	<17.4	1160	1090	94	1160	1100	95	-	70-135	35	

35

70-135

89

1090

1160

88

1160

55.2

C12-C28 Diesel Range Hydrocarbons

1090 1080

--

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.

Final 1.000

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Project Name: Lea to Jal 8" Line 1 Pump

Work O	rders: 47829	00, Sample: 478237-001 SD / N	ASD Bate	Project ID	: SRS# 2014-	-014	
Units:	mg/kg	Date Analyzed: 01/29/14 20:35	SU	RROGATE R	ECOVERY	STUDY	
	ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorood	ctane		116	99.9	116	70-135	
o-Terpheny	yl		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



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

Certificate of Analysis Summary 478290 PLAINS ALL AMERICAN EH&S, Midland, TX Project Name: Lea to Jal 8" Line 1 Pump



Date Received in Lab: Tue Jan-28-14 04:28 pm Report Date: 04-FEB-14

roject Location: NM				Report Date:	04-FEB-14	
			Pro	oject Manager:	Kelsey Brooks	
	Lab Id:	478290-001				
Australia Damandad	Field Id:	Stockpile				
Analysis Kequesieu	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				

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

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Project Manager Kelsey Brooks

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