Basin Environmental Service Technologies, LLC

Environmental Site Summary & Drilling Work Plan

Company: Plains All American Pipeline, LP **Address:** 2530 State Highway 214; Denver City, TX 79323 **Telephone #:** (806)592-2555

Site Name: Former Maljamar Station **NMOCD Reference#:** 2RP-2504

Land Owner: US Bureau of Land Management **Address:** 620 E. Greene St., Carlsbad, NM 88220-6292

Unit Letter: "E" (SW/NW) **Section:** 25 **Township:** 18S **Range:** 31E **County:** Eddy **GPS Coordinates:** 32.719323 **N** -103.828191 **W**

Depth to Ground Water: ≈ 315' - 320' **Distance to Surface Water Body:** ☐ **<200'** ☐ **200' - 1,000'** ☐ **>1,000'**

Wellhead Protection Area: <1,000' from Water Source or <200' from Domestic Water Source? ☐ **Y** ☐ **N**

NMOCD Ranking Score: 0 **Soil Remediation Levels (mg/kg): Benzene:** 10 **BTEX:** 50 **TPH:** ☐ **100** ☐ **1,000** ☐ **5,000** **Chloride:** ☐ **100** ☐ **500** ☐ **1,000**

Date/Time of Release: Unknown **Type of Release:** Crude Oil **Approximate Volume of Release:** Unknown

Background Information:

In March of 2013, Plains Marketing, LP's (Plains) Maljamar Station crude oil pumping station was decommissioned and dismantled. During the removal of the on-site storage tanks, it was discovered that a release (or series of releases) had occurred at some point in the past. The nature, cause, and extent of the release(s) remains undetermined. Visibly stained, heavily impacted soil from underneath the storage tanks and from within the surrounding earthen containment berm was scraped up and stockpiled on-site in anticipation of additional remediation activities to be conducted at a later date.

On August 27, 2014, a representative of the United States Department of the Interior - Bureau of Land Management's (BLM) Carlsbad Field Office visited the Former Maljamar Station site and observed that soil remediation activities had yet to be conducted. The BLM representative notified Plains via email that additional soil remediation and subsequent revegetation of the site is required.

At the request of Plains, Basin Environmental Service Technologies, LLC (Basin Environmental), assumed remediation duties for the Former Maljamar Station site.

On September 9, 2014, representatives of Basin Environmental, Plains, and the BLM met on-site to determine a path forward to a BLM- and NMOCD-approved closure. Following the meeting, a "Delineation Work Plan" (Delineation Plan) was developed outlining a strategy to investigate the horizontal and vertical extent of contaminated soil. The Delineation Plan was submitted to the NMOCD and BLM for review on September 22, 2014, and approved by both agencies, with the proviso that additional delineation beyond the proposed fifteen-foot (15') trenching depth and/or hard caliche layer may be required.

Remediation of contaminated soil to the north, east, and northwest of the Former Maljamar Station site was conducted by Basin Environmental in conjunction with the remediation of a pipeline release which occurred on February 8, 2006. Details of soil remediation activities were summarized in the "Closure Request, Caprock to Maljamar 4-Inch (231735)", dated February 27, 2007, and on-file with the NMOCD Artesia District Office and BLM Carlsbad Field Office.

Summary of Field Activities:

On September 30, 2014, Basin Environmental commenced delineation activities at the site. Pursuant to the Delineation Plan, a series of eleven (11) delineation trenches (TT-1 through TT-11) were advanced to investigate the horizontal and vertical extent of contaminated soil. The trenches were advanced at two-foot (2') intervals, and soil samples collected from the floors of the trenches were field-screened with a photo-ionization detector (PID) and/or chloride test kit. Selected soil samples were submitted to Xenco Laboratories in Odessa, Texas, for confirmatory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX), total petroleum hydrocarbons (TPH), and/or chloride using Environmental Protection Agency (EPA) Methods SW 846-8021b, SW 846-8015M, and 300.1, respectively.

Laboratory analytical results indicate vertical delineation in the pastureland adjacent to the site has been achieved. Vertical delineation was not achieved in delineation trenches TT-2, TT-3, TT-5, TT-6, and TT-8. Additional vertical delineation is required in the areas represented by these trenches.

Locations of the delineation trenches are depicted in Attachment #2, "Proposed Soil Boring Location Map". Laboratory analytical results are summarized in Attachment #3. Field-screen results are provided in Attachment #4.

Basin Environmental Service Technologies, LLC

Environmental Site Summary & Drilling Work Plan

Proposed Activities:

A total of four (4) soil borings will be advanced inside the fence surrounding the Former Maljamar Station site to further investigate the vertical extent of impacted soil. Locations of the soil borings are depicted in Attachment #2, "Proposed Soil Locations Map".

- Soil boring SB-1 will be advanced in an area characterized by a historic pit, represented by trenches TT-2, TT-3 & TT-5.
- Soil boring SB-2 will be advanced in the area represented by trench TT-6.
- Soil boring SB-3 will be advanced in the area represented by trench TT-8.
- Soil boring SB-4 will be advanced in the footprint of the earthen berm which had surrounded the on-site storage tanks.

The soil borings will be advanced at five-foot (5') intervals until PID readings and visual and olfactory senses suggest contaminants of concern are below the recommended remediation action levels established for the site by the NMOCD. Selected soil samples will be submitted to Xenco Laboratories for confirmatory analysis of BTEX, TPH & chloride concentrations.

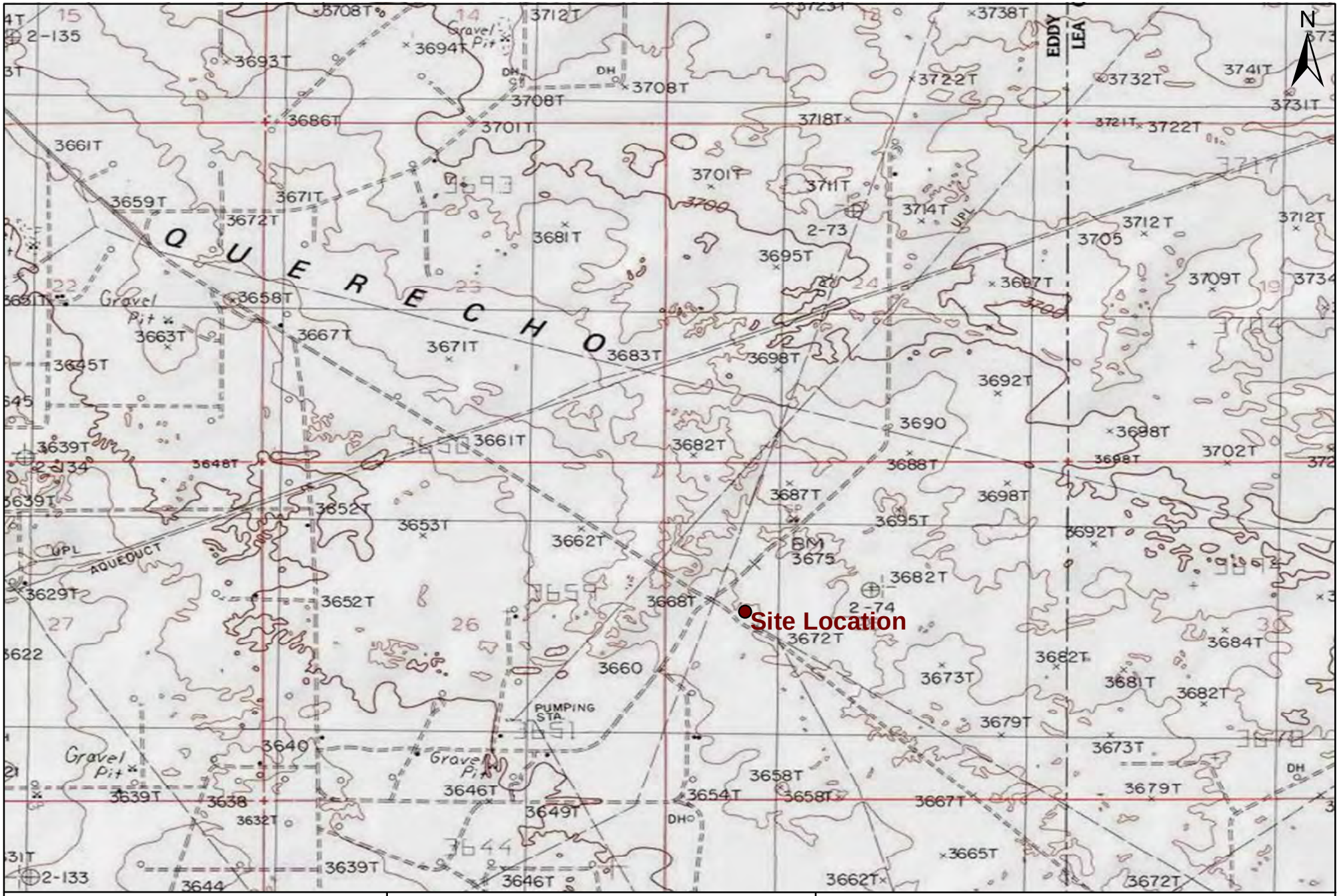
Upon receipt of laboratory analytical results, a "Remediation Summary & Site Closure Proposal" (Work Plan) will be developed, outlining an appropriate soil remediation strategy for the site. The Work Plan will be submitted to both the NMOCD and BLM for review and approval by November 15, 2014.

Proposed Soil Boring/Monitor Well Locations:				Name/Description:
32.719492	N	-103.828405	W	PSB-1 (Proposed Soil Boring SB-1)
32.719126	N	-103.828415	W	PSB-2 (Proposed Soil Boring SB-2)
32.719213	N	-103.828041	W	PSB-3 (Proposed Soil Boring SB-3)
32.719323	N	-103.828197	W	PSB-4 (Proposed Soil Boring SB-4)

Attachments:

Attachment #1: Site Location Map
Attachment #2: Proposed Soil Boring Location Map
Attachment #3: Concentrations of Benzene, BTEX, TPH & Chloride in Soil
Attachment #4: Field-Test Results
Attachment #5: Laboratory Analytical Report

Ben J. Arguijo
Project Manager



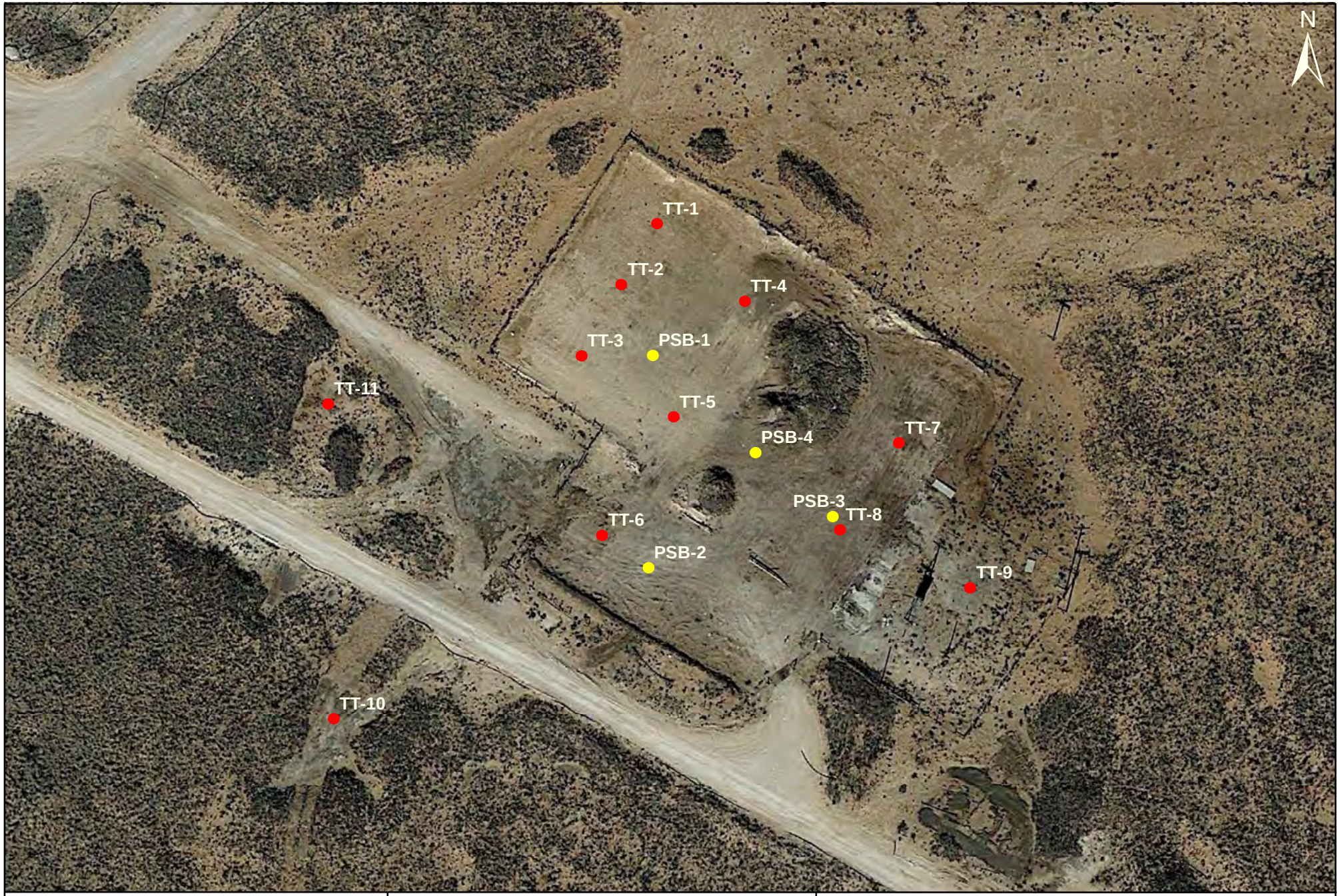
1,000500 0 1,000 2,000

Distance in Feet

Attachment #1
Site Location Map
Plains Marketing, LP
Maljamar Station
Eddy County, New Mexico

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

Drawn By: BJA	Checked By: BRB
September 12, 2014	Scale: 1" = 2,000'



40 20 0 40 80

Distance in Feet

Legend

- Proposed Soil Boring
- Delineation Trench

Attachment #2
Proposed Soil Boring Locations Map
Plains Marketing, LP
Former Maljamar Station
Eddy County, New Mexico
Plains SRS: HD0-95-61 Former Maljamar Station

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

Drawn By: BJA	Checked By: BRB
October 7, 2014	Scale: 1" = 80'

ATTACHMENT #3
CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

PLAINS MARKETING, LP
FORMER MALJAMAR STATION
EDDY COUNTY, NEW MEXICO
PLAINS SRS: HD0-95-61 FORMER MALJAMAR STATION

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030							METHOD: 8015M			TPH C_6-C_{35} (mg/Kg)	300.1
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	M.P. - XYLENES (mg/Kg)	O-XYLENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C_6-C_{12} (mg/Kg)	DRO C_{12}-C_{28} (mg/Kg)	ORO C_{28}-C_{35} (mg/Kg)		CHLORIDE (mg/Kg)
TT-1 @ 4'	4'	9/30/2014	In-Situ	-	-	-	-	-	-	-	353	4,660	737	**5,750**	121
TT-1 @ 8'	8'	9/30/2014	In-Situ	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<0.0023	<16.9	48.3	<16.9	48.3	178
TT-2 @ 2'	2'	9/30/2014	In-Situ	-	-	-	-	-	-	-	1,870	29,200	6,070	**37,100**	81.0
TT-2 @ 4'	4'	9/30/2014	In-Situ	-	-	-	-	-	-	-	579	5,330	743	**6,650**	16.3
TT-2 @ 6'	6'	9/30/2014	In-Situ	<0.0012	0.0033	0.0737	0.103	0.0431	0.146	0.223	714	4,380	503	**5,600**	8.17
TT-3 @ 4'	4'	9/30/2014	In-Situ	-	-	-	-	-	-	-	2,910	14,700	1,880	**19,500**	937
TT-3 @ 8'	8'	9/30/2014	In-Situ	-	-	-	-	-	-	-	1,500	8,120	963	**10,600**	354
TT-4 @ 2'	2'	9/30/2014	In-Situ	-	-	-	-	-	-	-	19.5	526	127	673	84.7
TT-4 @ 6'	6'	9/30/2014	In-Situ	<0.0012	<0.0024	0.0036	0.0045	<0.0012	0.0045	0.0080	48.2	880	134	1,060	67.3
TT-5 @ 4'	4'	9/30/2014	In-Situ	-	-	-	-	-	-	-	949	7,060	900	**8,910**	3.03
TT-5 @ 8'	8'	9/30/2014	In-Situ	-	-	-	-	-	-	-	910	4,810	497	**6,220**	48.6
TT-5 @ 14'	14'	9/30/2014	In-Situ	-	-	-	-	-	-	-	1,660	8,080	896	**10,600**	74.2
TT-6 @ 4'	4'	9/30/2014	In-Situ	-	-	-	-	-	-	-	4,090	20,400	2,500	**27,000**	3.98
TT-6 @ 7'	7'	9/30/2014	In-Situ	-	-	-	-	-	-	-	4,590	18,200	2,250	**25,000**	14.0
TT-7 @ 2'	2'	9/30/2014	In-Situ	-	-	-	-	-	-	-	47.4	626	88.7	762	<2.17
TT-7 @ 6'	6'	9/30/2014	In-Situ	<0.0012	<0.0024	<0.0012	<0.0024	<0.0012	<0.0024	<0.0024	<17.9	30.4	<17.9	30.4	6.62
TT-8 @ 4'	4'	9/30/2014	In-Situ	-	-	-	-	-	-	-	1,460	8,340	1,190	**11,000**	<2.30
TT-8 @ 9.5'	9.5'	9/30/2014	In-Situ	-	-	-	-	-	-	-	2,030	9,240	1,180	**12,500**	22.5
TT-9 @ 2'	2'	9/30/2014	In-Situ	-	-	-	-	-	-	-	<16.0	<16.0	<16.0	<16.0	<2.13
TT-9 @ 4'	4'	9/30/2014	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<0.0022	<16.6	<16.6	<16.6	<16.6	<2.21
TT-10 @ 4'	4'	9/30/2014	In-Situ	-	-	-	-	-	-	-	4,070	17,300	2,440	**23,800**	<2.34
TT-10 @ 8'	8'	9/30/2014	In-Situ	<0.0012	<0.0024	0.0044	0.012	<0.0012	0.012	0.0164	159	3,350	708	4,220	<2.40
TT-11 @ 2'	2'	9/30/2014	In-Situ	-	-	-	-	-	-	-	<18.3	119	47.9	167	<2.44
TT-11 @ 4'	4'	9/30/2014	In-Situ	<0.0012	<0.0024	<0.0012	<0.0024	<0.0012	<0.0024	<0.0024	<18.0	547	142	689	<2.38
NMOCD Recommended Remediation Action Level				**10**						**50**				**5,000**	**1,000**

- = Not analyzed.

ATTACHMENT #4
FIELD-TEST RESULTS

PLAINS MARKETING, LP
FORMER MALJAMAR STATION
EDDY COUNTY, NEW MEXICO
PLAINS SRS: HD0-95-61 FORMER MALJAMAR STATION

DELINEATION TRENCH	SAMPLE DATE	SAMPLE DEPTH (bgs)	Field Screens	
			PID READING	CHLORIDE
TT-1	9/30/2014	2'	1,250	-
	"	4'	1,252	352
	"	8'	31.2	276
TT-2	"	2'	200	-
	"	4'	1,464	-
	"	6'	1,800	<124
TT-3	"	4'	2,343	-
	"	6'	2,361	-
	"	8'	2,466	432
TT-4	"	2'	11.7	180
	"	4'	4.7	-
	"	6'	208	<124
TT-5	"	4'	1,130	-
	"	6'	1,960	-
	"	8'	1,905	-
	"	10'	1,578	-
	"	14'	2,339	<124
TT-6	"	4'	1,694	-
	"	6'	1,529	-
	"	7'	1,884	<124
TT-7	"	2'	524	-
	"	4'	813	-
	"	6'	1.6	<124
TT-8	"	2'	1.5	-
	"	4'	1,335	-
	"	6'	1,814	-
	"	8'	1,736	-
	"	9.5'	1,871	<124
TT-9	"	2'	0.5	-
	"	4'	1.1	<124
TT-10	"	2'	72.5	-
	"	4'	1,654	-
	"	6'	946	-
	"	8'	100	<124
TT-11	"	2'	19.9	-
	"	4'	19.6	<124

Attachment #5

Laboratory Analytical Report

Analytical Report 494567

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Formar Maljamar Station

SRS HD0-95-61

14-OCT-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)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

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

14-OCT-14

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

Reference: XENCO Report No(s): **494567**
Formar Maljamar Station
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) 494567. 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. 494567 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 494567

PLAINS ALL AMERICAN EH&S, Midland, TX

Formar Maljamar Station

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TT-1 @ 4'	S	09-30-14 10:05	- 4 In	494567-001
TT-1 @ 8'	S	09-30-14 10:10	- 8 In	494567-002
TT-2 @ 2'	S	09-30-14 10:30	- 2 In	494567-003
TT-2 @ 4'	S	09-30-14 10:35	- 4 In	494567-004
TT-2 @ 6'	S	09-30-14 10:40	- 6 In	494567-005
TT-3 @ 4'	S	09-30-14 11:00	- 4 In	494567-006
TT-3 @ 8'	S	09-30-14 11:10	- 8 In	494567-007
TT-4 @ 2'	S	09-30-14 11:30	- 2 In	494567-008
TT-4 @ 6'	S	09-30-14 11:40	- 6 In	494567-009
TT-5 @ 4'	S	09-30-14 12:30	- 4 In	494567-010
TT-5 @ 8'	S	09-30-14 12:40	- 8 In	494567-011
TT-5 @ 14'	S	09-30-14 12:55	- 14 In	494567-012
TT-6 @ 4'	S	09-30-14 13:15	- 4 In	494567-013
TT-6 @ 7'	S	09-30-14 13:25	- 7 In	494567-014
TT-7 @ 2'	S	09-30-14 13:50	- 2 In	494567-015
TT-7 @ 6'	S	09-30-14 14:00	- 6 In	494567-016
TT-8 @ 4'	S	09-30-14 14:30	- 4 In	494567-017
TT-8 @ 9.5'	S	09-30-14 14:45	- 9.5 In	494567-018
TT-9 @ 2'	S	09-30-14 15:05	- 2 In	494567-019
TT-9 @ 4'	S	09-30-14 15:10	- 4 In	494567-020
TT-10 @ 4'	S	09-30-14 15:25	- 4 In	494567-021
TT-10 @ 8'	S	09-30-14 15:40	- 8 In	494567-022
TT-11 @ 2'	S	09-30-14 16:05	- 2 In	494567-023
TT-11 @ 4'	S	09-30-14 16:10	- 4 In	494567-024

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Formar Maljamar Station

Project ID: *SRS HD0-95-61*
Work Order Number(s): *494567*

Report Date: *14-OCT-14*
Date Received: *10/03/2014*

Sample receipt non conformances and comments:

TT-3 @8' and TT-5 @14' rush for TPH

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 494567

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Formar Maljamar Station

Project Id: SRS HD0-95-61
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Fri Oct-03-14 12:30 pm
Report Date: 14-OCT-14
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	494567-001		494567-002		494567-003		494567-004		494567-005		494567-006	
	Field Id:	TT-1 @ 4'		TT-1 @ 8'		TT-2 @ 2'		TT-2 @ 4'		TT-2 @ 6'		TT-3 @ 4'	
	Depth:	4 In		8 In		2 In		4 In		6 In		4 In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-30-14 10:05		Sep-30-14 10:10		Sep-30-14 10:30		Sep-30-14 10:35		Sep-30-14 10:40		Sep-30-14 11:00	
BTEX by EPA 8021B	*Extracted:*			Oct-07-14 09:00						Oct-07-14 09:00			
	Analyzed:			Oct-07-14 21:03						Oct-07-14 21:19			
	Units/RL:			mg/kg	RL					mg/kg	RL		
Benzene				ND	0.00113					ND	0.00116		
Toluene				ND	0.00225					0.00333	0.00231		
Ethylbenzene				ND	0.00113					0.0737	0.00116		
m_p-Xylenes				ND	0.00225					0.103	0.00231		
o-Xylene				ND	0.00113					0.0431	0.00116		
Total Xylenes				ND	0.00113					0.146	0.00116		
Total BTEX				ND	0.00113					0.223	0.00116		
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	*Extracted:*	Oct-10-14 13:00		Oct-10-14 13:00		Oct-10-14 13:00		Oct-10-14 13:00		Oct-10-14 13:00		Oct-10-14 13:00	
	Analyzed:	Oct-11-14 11:45		Oct-11-14 11:58		Oct-11-14 12:11		Oct-11-14 12:25		Oct-11-14 12:38		Oct-11-14 12:51	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		121	10.7	178	22.6	81.0	11.8	16.3	2.26	8.17	2.31	937	107
Percent Moisture	*Extracted:*												
	Analyzed:	Oct-06-14 16:00		Oct-06-14 16:00		Oct-06-14 16:00		Oct-06-14 16:00		Oct-06-14 16:00		Oct-06-14 16:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		7.17	1.00	11.6	1.00	15.4	1.00	11.8	1.00	13.7	1.00	6.79	1.00
TPH By SW8015 Mod	*Extracted:*	Oct-03-14 15:00		Oct-03-14 15:00		Oct-03-14 15:00		Oct-03-14 15:00		Oct-03-14 15:00		Oct-03-14 15:00	
	Analyzed:	Oct-03-14 18:51		Oct-03-14 19:18		Oct-03-14 20:35		Oct-03-14 20:59		Oct-03-14 21:23		Oct-03-14 21:47	
	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		353	80.5	ND	16.9	1870	354	579	84.8	714	17.4	2910	161
C12-C28 Diesel Range Hydrocarbons		4660	80.5	48.3	16.9	29200	354	5330	84.8	4380	17.4	14700	161
C28-C35 Oil Range Hydrocarbons		737	80.5	ND	16.9	6070	354	743	84.8	503	17.4	1880	161
Total TPH		5750	80.5	48.3	16.9	37100	354	6650	84.8	5600	17.4	19500	161

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 494567

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Formar Maljamar Station

Project Id: SRS HD0-95-61
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Fri Oct-03-14 12:30 pm
Report Date: 14-OCT-14
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	494567-007		494567-008		494567-009		494567-010		494567-011		494567-012	
	Field Id:	TT-3 @ 8'		TT-4 @ 2'		TT-4 @ 6'		TT-5 @ 4'		TT-5 @ 8'		TT-5 @ 14'	
	Depth:	8 In		2 In		6 In		4 In		8 In		14 In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-30-14 11:10		Sep-30-14 11:30		Sep-30-14 11:40		Sep-30-14 12:30		Sep-30-14 12:40		Sep-30-14 12:55	
BTEX by EPA 8021B	***Extracted:***					Oct-07-14 09:00							
	Analyzed:					Oct-07-14 21:36							
	Units/RL:					mg/kg	RL						
Benzene						ND	0.00120						
Toluene						ND	0.00239						
Ethylbenzene						0.00357	0.00120						
m_p-Xylenes						0.00445	0.00239						
o-Xylene						ND	0.00120						
Total Xylenes						0.00445	0.00120						
Total BTEX						0.00802	0.00120						
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Oct-10-14 13:00		Oct-10-14 13:00		Oct-13-14 11:40		Oct-10-14 13:00		Oct-10-14 13:00		Oct-13-14 11:40	
	Analyzed:	Oct-11-14 13:43		Oct-11-14 14:36		Oct-13-14 13:33		Oct-11-14 15:15		Oct-11-14 15:02		Oct-13-14 13:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		354	46.3	84.7	44.8	67.3	4.79	3.03	2.13	48.6	2.63	74.2	11.9
Percent Moisture	***Extracted:***												
	Analyzed:	Oct-03-14 13:30		Oct-06-14 16:00		Oct-06-14 16:00		Oct-06-14 16:00		Oct-06-14 16:00		Oct-03-14 13:30	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		14.3	1.00	11.8	1.00	16.6	1.00	6.34	1.00	24.5	1.00	16.4	1.00
TPH By SW8015 Mod	***Extracted:***	Oct-03-14 15:00		Oct-03-14 15:00		Oct-03-14 15:00		Oct-03-14 15:00		Oct-03-14 15:00		Oct-03-14 15:00	
	Analyzed:	Oct-03-14 22:13		Oct-03-14 22:41		Oct-03-14 23:08		Oct-03-14 23:35		Oct-04-14 00:59		Oct-04-14 01:27	
	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		1500	175	19.5	17.0	48.2	17.9	949	79.9	910	19.8	1660	179
C12-C28 Diesel Range Hydrocarbons		8120	175	526	17.0	880	17.9	7060	79.9	4810	19.8	8080	179
C28-C35 Oil Range Hydrocarbons		963	175	127	17.0	134	17.9	900	79.9	497	19.8	896	179
Total TPH		10600	175	673	17.0	1060	17.9	8910	79.9	6220	19.8	10600	179

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 494567

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Formar Maljamar Station

Project Id: SRS HD0-95-61
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Fri Oct-03-14 12:30 pm
Report Date: 14-OCT-14
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	494567-013		494567-014		494567-015		494567-016		494567-017		494567-018	
	Field Id:	TT-6 @ 4'		TT-6 @ 7'		TT-7 @ 2'		TT-7 @ 6'		TT-8 @ 4'		TT-8 @ 9.5'	
	Depth:	4 In		7 In		2 In		6 In		4 In		9.5 In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-30-14 13:15		Sep-30-14 13:25		Sep-30-14 13:50		Sep-30-14 14:00		Sep-30-14 14:30		Sep-30-14 14:45	
BTEX by EPA 8021B	*Extracted:*							Oct-07-14 09:00					
	Analyzed:							Oct-07-14 21:52					
	Units/RL:							mg/kg	RL				
Benzene								ND	0.00119				
Toluene								ND	0.00237				
Ethylbenzene								ND	0.00119				
m_p-Xylenes								ND	0.00237				
o-Xylene								ND	0.00119				
Total Xylenes								ND	0.00119				
Total BTEX								ND	0.00119				
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	*Extracted:*	Oct-10-14 13:00		Oct-10-14 13:00		Oct-10-14 13:00		Oct-10-14 13:00		Oct-10-14 13:00		Oct-10-14 13:00	
	Analyzed:	Oct-11-14 19:50		Oct-11-14 23:20		Oct-11-14 16:33		Oct-11-14 16:47		Oct-11-14 17:00		Oct-11-14 17:13	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3.98	2.65	14.0	2.18	ND	2.17	6.62	2.38	ND	2.30	22.5	3.93
Percent Moisture	*Extracted:*												
	Analyzed:	Oct-06-14 16:00		Oct-06-14 16:00		Oct-06-14 16:00		Oct-06-14 16:00		Oct-06-14 16:00		Oct-06-14 16:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		24.9	1.00	8.55	1.00	8.44	1.00	16.2	1.00	13.3	1.00	23.6	1.00
TPH By SW8015 Mod	*Extracted:*	Oct-03-14 15:00		Oct-03-14 15:00		Oct-03-14 15:00		Oct-03-14 15:00		Oct-03-14 15:00		Oct-03-14 15:00	
	Analyzed:	Oct-04-14 01:51		Oct-04-14 02:20		Oct-04-14 02:48		Oct-06-14 10:07		Oct-04-14 03:43		Oct-04-14 04:12	
	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		4090	398	4590	327	47.4	16.4	ND	17.9	1460	173	2030	196
C12-C28 Diesel Range Hydrocarbons		20400	398	18200	327	626	16.4	30.4	17.9	8340	173	9240	196
C28-C35 Oil Range Hydrocarbons		2500	398	2250	327	88.7	16.4	ND	17.9	1190	173	1180	196
Total TPH		27000	398	25000	327	762	16.4	30.4	17.9	11000	173	12500	196

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 494567

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Formar Maljamar Station

Project Id: SRS HD0-95-61
Contact: Ben Arguijo
Project Location: NM

Date Received in Lab: Fri Oct-03-14 12:30 pm
Report Date: 14-OCT-14
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	494567-019		494567-020		494567-021		494567-022		494567-023		494567-024	
	Field Id:	TT-9 @ 2'		TT-9 @ 4'		TT-10 @ 4'		TT-10 @ 8'		TT-11 @ 2'		TT-11 @ 4'	
	Depth:	2 In		4 In		4 In		8 In		2 In		4 In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-30-14 15:05		Sep-30-14 15:10		Sep-30-14 15:25		Sep-30-14 15:40		Sep-30-14 16:05		Sep-30-14 16:10	
BTEX by EPA 8021B	*Extracted:*			Oct-07-14 09:00				Oct-07-14 09:00				Oct-07-14 09:00	
	Analyzed:			Oct-07-14 22:09				Oct-07-14 22:25				Oct-07-14 22:41	
	Units/RL:			mg/kg	RL			mg/kg	RL			mg/kg	RL
Benzene				ND	0.00111			ND	0.00120			ND	0.00120
Toluene				ND	0.00222			ND	0.00241			ND	0.00240
Ethylbenzene				ND	0.00111			0.00436	0.00120			ND	0.00120
m_p-Xylenes				ND	0.00222			0.0120	0.00241			ND	0.00240
o-Xylene				ND	0.00111			ND	0.00120			ND	0.00120
Total Xylenes				ND	0.00111			0.0120	0.00120			ND	0.00120
Total BTEX				ND	0.00111			0.0164	0.00120			ND	0.00120
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	*Extracted:*	Oct-10-14 13:00		Oct-10-14 13:00		Oct-10-14 13:00		Oct-10-14 13:00		Oct-10-14 13:00		Oct-10-14 13:00	
	Analyzed:	Oct-11-14 17:26		Oct-11-14 17:39		Oct-11-14 17:52		Oct-11-14 18:05		Oct-11-14 18:45		Oct-11-14 20:29	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		ND	2.13	ND	2.21	ND	2.34	ND	2.40	ND	2.44	ND	2.38
Percent Moisture	*Extracted:*												
	Analyzed:	Oct-06-14 16:00		Oct-06-14 16:00		Oct-06-14 16:00		Oct-06-14 16:00		Oct-06-14 16:00		Oct-06-14 16:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		6.37	1.00	9.99	1.00	14.8	1.00	17.0	1.00	18.0	1.00	16.8	1.00
TPH By SW8015 Mod	*Extracted:*	Oct-03-14 15:00		Oct-03-14 15:00		Oct-03-14 15:00		Oct-03-14 15:00		Oct-03-14 15:00		Oct-03-14 15:00	
	Analyzed:	Oct-04-14 04:40		Oct-04-14 05:07		Oct-04-14 14:13		Oct-04-14 14:38		Oct-04-14 15:03		Oct-04-14 15:28	
	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	16.0	ND	16.6	4070	175	159	90.1	ND	18.3	ND	18.0
C12-C28 Diesel Range Hydrocarbons		ND	16.0	ND	16.6	17300	175	3350	90.1	119	18.3	547	18.0
C28-C35 Oil Range Hydrocarbons		ND	16.0	ND	16.6	2440	175	708	90.1	47.9	18.3	142	18.0
Total TPH		ND	16.0	ND	16.6	23800	175	4220	90.1	167	18.3	689	18.0

Kelsey Brooks
Project Manager

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: Formar Maljamar Station

Work Orders : 494567,

Project ID: SRS HD0-95-61

Lab Batch #: 952189 **Sample:** 494567-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/03/14 18:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.6	129	70-135	
o-Terphenyl	61.8	49.8	124	70-135	

Lab Batch #: 952189 **Sample:** 494567-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/03/14 19:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.7	112	70-135	
o-Terphenyl	58.8	49.9	118	70-135	

Lab Batch #: 952189 **Sample:** 494567-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/03/14 20:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.8	112	70-135	
o-Terphenyl	55.9	49.9	112	70-135	

Lab Batch #: 952189 **Sample:** 494567-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/03/14 20:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	99.7	123	70-135	
o-Terphenyl	63.0	49.9	126	70-135	

Lab Batch #: 952189 **Sample:** 494567-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/03/14 21:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	64.7	50.0	129	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: Formar Maljamar Station

Work Orders : 494567,

Project ID: SRS HD0-95-61

Lab Batch #: 952189 **Sample:** 494567-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/03/14 21:47

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	99.9	123	70-135	
o-Terphenyl	58.2	50.0	116	70-135	

Lab Batch #: 952189 **Sample:** 494567-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/03/14 22:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.9	114	70-135	
o-Terphenyl	45.5	50.0	91	70-135	

Lab Batch #: 952189 **Sample:** 494567-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/03/14 22:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.7	112	70-135	
o-Terphenyl	60.3	49.9	121	70-135	

Lab Batch #: 952189 **Sample:** 494567-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/03/14 23:08

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.8	118	70-135	
o-Terphenyl	64.2	49.9	129	70-135	

Lab Batch #: 952189 **Sample:** 494567-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/03/14 23:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	99.8	123	70-135	
o-Terphenyl	63.4	49.9	127	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: Formar Maljamar Station

Work Orders : 494567,

Project ID: SRS HD0-95-61

Lab Batch #: 952189 **Sample:** 494567-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/04/14 00:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.8	129	70-135	
o-Terphenyl	64.6	49.9	129	70-135	

Lab Batch #: 952189 **Sample:** 494567-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/04/14 01:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	64.5	50.0	129	70-135	

Lab Batch #: 952189 **Sample:** 494567-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/04/14 01:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.6	118	70-135	
o-Terphenyl	39.2	49.8	79	70-135	

Lab Batch #: 952189 **Sample:** 494567-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/04/14 02:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	99.6	126	70-135	
o-Terphenyl	62.0	49.8	124	70-135	

Lab Batch #: 952189 **Sample:** 494567-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/04/14 02:48

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.8	126	70-135	
o-Terphenyl	64.1	49.9	128	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: Formar Maljamar Station

Work Orders : 494567,

Project ID: SRS HD0-95-61

Lab Batch #: 952189 **Sample:** 494567-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/04/14 03:43

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	99.8	120	70-135	
o-Terphenyl	63.0	49.9	126	70-135	

Lab Batch #: 952189 **Sample:** 494567-018 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/04/14 04:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	99.7	125	70-135	
o-Terphenyl	63.7	49.9	128	70-135	

Lab Batch #: 952189 **Sample:** 494567-019 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/04/14 04:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.9	114	70-135	
o-Terphenyl	59.7	50.0	119	70-135	

Lab Batch #: 952189 **Sample:** 494567-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/04/14 05:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.9	108	70-135	
o-Terphenyl	57.3	50.0	115	70-135	

Lab Batch #: 952196 **Sample:** 494567-021 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/04/14 14:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.7	129	70-135	
o-Terphenyl	64.7	49.9	130	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: Formar Maljamar Station

Work Orders : 494567,

Project ID: SRS HD0-95-61

Lab Batch #: 952196 **Sample:** 494567-022 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/04/14 14:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.7	129	70-135	
o-Terphenyl	59.7	49.9	120	70-135	

Lab Batch #: 952196 **Sample:** 494567-023 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/04/14 15:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	63.8	50.0	128	70-135	

Lab Batch #: 952196 **Sample:** 494567-024 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/04/14 15:28

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.9	118	70-135	
o-Terphenyl	63.8	50.0	128	70-135	

Lab Batch #: 952189 **Sample:** 494567-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/06/14 10:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.9	109	70-135	
o-Terphenyl	56.8	50.0	114	70-135	

Lab Batch #: 952300 **Sample:** 494567-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/07/14 21:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0320	0.0300	107	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Formar Maljamar Station

Work Orders : 494567,

Project ID: SRS HD0-95-61

Lab Batch #: 952300 **Sample:** 494567-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/07/14 21:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

Lab Batch #: 952300 **Sample:** 494567-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/07/14 21:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0336	0.0300	112	80-120	

Lab Batch #: 952300 **Sample:** 494567-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/07/14 21:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0317	0.0300	106	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 952300 **Sample:** 494567-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/07/14 22:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 952300 **Sample:** 494567-022 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/07/14 22:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Formar Maljamar Station

Work Orders : 494567,

Project ID: SRS HD0-95-61

Lab Batch #: 952300 **Sample:** 494567-024 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/07/14 22:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 952189 **Sample:** 662476-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/03/14 17:37

SURROGATE RECOVERY 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	60.3	50.0	121	70-135	

Lab Batch #: 952196 **Sample:** 662478-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/04/14 06:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	61.8	50.0	124	70-135	

Lab Batch #: 952300 **Sample:** 662535-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/07/14 10:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	

Lab Batch #: 952189 **Sample:** 662476-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/03/14 18:02

SURROGATE RECOVERY 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	63.5	50.0	127	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: Formar Maljamar Station

Work Orders : 494567,

Project ID: SRS HD0-95-61

Lab Batch #: 952196 **Sample:** 662478-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/04/14 06:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	59.9	50.0	120	70-135	

Lab Batch #: 952300 **Sample:** 662535-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/07/14 11:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 952189 **Sample:** 662476-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/03/14 18:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	63.9	50.0	128	70-135	

Lab Batch #: 952196 **Sample:** 662478-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/04/14 07:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	64.2	50.0	128	70-135	

Lab Batch #: 952300 **Sample:** 662535-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/07/14 11:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Formar Maljamar Station

Work Orders : 494567,

Project ID: SRS HD0-95-61

Lab Batch #: 952189 **Sample:** 494567-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/03/14 20:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.6	121	70-135	
o-Terphenyl	57.4	49.8	115	70-135	

Lab Batch #: 952196 **Sample:** 494551-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/04/14 08:21

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.7	116	70-135	
o-Terphenyl	60.0	49.9	120	70-135	

Lab Batch #: 952300 **Sample:** 494551-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/07/14 11:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0351	0.0300	117	80-120	
4-Bromofluorobenzene	0.0346	0.0300	115	80-120	

Lab Batch #: 952196 **Sample:** 494551-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/04/14 08:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	99.7	127	70-135	
o-Terphenyl	64.3	49.9	129	70-135	

Lab Batch #: 952300 **Sample:** 494551-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/07/14 11:53

SURROGATE RECOVERY STUDY

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

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Blank Spike Recovery

Project Name: Formar Maljamar Station

Work Order #: 494567 **Project ID:** SRS HD0-95-61

Lab Batch #: 952736 **Sample:** 662809-1-BKS **Matrix:** Solid

Date Analyzed: 10/11/2014 **Date Prepared:** 10/10/2014 **Analyst:** BHRE

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

Inorganic Anions by EPA 300/300.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	<2.00	20.0	19.7	99	80-120	

Lab Batch #: 952738 **Sample:** 662811-1-BKS **Matrix:** Solid

Date Analyzed: 10/11/2014 **Date Prepared:** 10/10/2014 **Analyst:** BHRE

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

Inorganic Anions by EPA 300/300.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	<2.00	20.0	19.6	98	80-120	

Lab Batch #: 952870 **Sample:** 662875-1-BKS **Matrix:** Solid

Date Analyzed: 10/13/2014 **Date Prepared:** 10/13/2014 **Analyst:** BHRE

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

Inorganic Anions by EPA 300/300.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	<10.0	100	98.3	98	80-120	

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

BRL - Below Reporting Limit

BS / BSD Recoveries

Project Name: Formar Maljamar Station

Work Order #: 494567 **Project ID:** SRS HD0-95-61

Analyst: ARM **Date Prepared:** 10/07/2014 **Date Analyzed:** 10/07/2014

Lab Batch ID: 952300 **Sample:** 662535-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0912	91	0.100	0.0897	90	2	70-130	35	
Toluene	<0.00200	0.100	0.0963	96	0.100	0.0947	95	2	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0999	100	0.100	0.0978	98	2	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.205	103	0.200	0.200	100	2	70-135	35	
o-Xylene	<0.00100	0.100	0.0956	96	0.100	0.0933	93	2	71-133	35	

Analyst: ARM **Date Prepared:** 10/03/2014 **Date Analyzed:** 10/03/2014

Lab Batch ID: 952189 **Sample:** 662476-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	967	97	1000	978	98	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1130	113	1000	1180	118	4	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

BS / BSD Recoveries

Project Name: Formar Maljamar Station

Work Order #: 494567 **Project ID:** SRS HD0-95-61

Analyst: ARM **Date Prepared:** 10/03/2014 **Date Analyzed:** 10/04/2014

Lab Batch ID: 952196 **Sample:** 662478-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	921	92	1000	998	100	8	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1200	120	1000	1160	116	3	70-135	35	

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

Form 3 - MS Recoveries

Project Name: Formar Maljamar Station

Work Order #: 494567

Lab Batch #: 952189 **Project ID:** SRS HD0-95-61

Date Analyzed: 10/03/2014 **Date Prepared:** 10/03/2014 **Analyst:** ARM

QC- Sample ID: 494567-002 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

TPH by SW8015 Mod Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
C6-C12 Gasoline Range Hydrocarbons	<16.9	1130	1050	93	70-135	
C12-C28 Diesel Range Hydrocarbons	48.3	1130	1340	114	70-135	

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

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: Formar Maljamar Station

Work Order # : 494567 **Project ID:** SRS HD0-95-61

Lab Batch ID: 952300 **QC- Sample ID:** 494551-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/07/2014 **Date Prepared:** 10/07/2014 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00107	0.107	0.0932	87	0.108	0.0840	78	10	70-130	35	
Toluene	<0.00215	0.107	0.0902	84	0.108	0.0840	78	7	70-130	35	
Ethylbenzene	<0.00107	0.107	0.0830	78	0.108	0.0794	74	4	71-129	35	
m_p-Xylenes	<0.00215	0.215	0.169	79	0.215	0.162	75	4	70-135	35	
o-Xylene	<0.00107	0.107	0.0804	75	0.108	0.0770	71	4	71-133	35	

Lab Batch ID: 952736 **QC- Sample ID:** 494567-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/11/2014 **Date Prepared:** 10/10/2014 **Analyst:** BHRE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	8.17	23.1	31.3	100	23.1	31.2	100	0	80-120	20	

Lab Batch ID: 952736 **QC- Sample ID:** 494567-010 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/11/2014 **Date Prepared:** 10/10/2014 **Analyst:** BHRE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	3.03	21.3	22.6	92	21.3	22.7	92	0	80-120	20	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: Formar Maljamar Station

Work Order # : 494567 **Project ID:** SRS HD0-95-61

Lab Batch ID: 952738 **QC- Sample ID:** 494567-013 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/11/2014 **Date Prepared:** 10/10/2014 **Analyst:** BHRE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	3.98	26.5	29.9	98	26.5	29.9	98	0	80-120	20	

Lab Batch ID: 952738 **QC- Sample ID:** 494567-014 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/11/2014 **Date Prepared:** 10/10/2014 **Analyst:** BHRE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	14.0	21.8	36.3	102	21.8	36.5	103	1	80-120	20	

Lab Batch ID: 952870 **QC- Sample ID:** 494630-001 S **Batch #:** 1 **Matrix:** Sludge

Date Analyzed: 10/13/2014 **Date Prepared:** 10/13/2014 **Analyst:** BHRE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	47.0	27.9	79.5	116	27.9	79.3	116	0	80-120	20	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: Formar Maljamar Station

Work Order # : 494567 **Project ID:** SRS HD0-95-61

Lab Batch ID: 952870 **QC- Sample ID:** 495045-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/14/2014 **Date Prepared:** 10/13/2014 **Analyst:** BHRE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<9.96	99.6	98.6	99	99.6	98.8	99	0	80-120	20	

Lab Batch ID: 952196 **QC- Sample ID:** 494551-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/04/2014 **Date Prepared:** 10/03/2014 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<16.1	1070	1040	97	1070	1260	118	19	70-135	35	
C12-C28 Diesel Range Hydrocarbons	622	1070	1820	112	1070	1910	120	5	70-135	35	

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

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

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

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

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

Sample Duplicate Recovery

Project Name: Formar Maljamar Station

Work Order #: 494567

Lab Batch #: 952117 **Project ID:** SRS HD0-95-61
Date Analyzed: 10/03/2014 13:30 **Date Prepared:** 10/03/2014 **Analyst:** WRU
QC- Sample ID: 494529-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	15.9	12.2	26	20	F

Lab Batch #: 952117
Date Analyzed: 10/03/2014 13:30 **Date Prepared:** 10/03/2014 **Analyst:** WRU
QC- Sample ID: 494543-004 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	3.14	18.7	142	20	F

Lab Batch #: 952276
Date Analyzed: 10/06/2014 16:00 **Date Prepared:** 10/06/2014 **Analyst:** WRU
QC- Sample ID: 494567-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	7.17	7.66	7	20	

Lab Batch #: 952276
Date Analyzed: 10/06/2014 16:00 **Date Prepared:** 10/06/2014 **Analyst:** WRU
QC- Sample ID: 494567-013 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	24.9	13.0	63	20	F

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

Sample Duplicate Recovery

Project Name: Formar Maljamar Station

Work Order #: 494567

Lab Batch #: 952278 **Project ID:** SRS HD0-95-61

Date Analyzed: 10/06/2014 16:00 **Date Prepared:** 10/06/2014 **Analyst:** WRU

QC- Sample ID: 494567-021 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	14.8	14.7	1	20	

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

BRL - Below Reporting Limit

CHAIN OF CUSTODY RECORD

XENCO Laboratories — Environmental Asbestos Radiochemistry

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

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Page 1 of 3

LAB W.O#: 494567

Field billable Hrs :

Company:	Basin Environmental Service Technologies, LLC	Phone:	(575)396-2378
Address:	3100 Plains Hwy.	Fax:	(575)396-1429
City:	Lovington	State: NM	Zip: 88260
PM/Attn:	Ben Arguijo	Email:	bjarguijo@basinenv.com
Project ID:	Former Maljamar Station SRS HD0-95-61	PO#:	PAA-C. Bryant
Invoice To:	Camille Bryant Plains All American	Quote #:	

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

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

Sampler Name: Ben J. Arguijo

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

ANALYSES REQUESTED

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	# Cont	Example Volatiles by 8260	TPH	Chloride									Hold Sample (CALL) Run PAH on Highest TPH Only if
								Cont Type * VC		GC	GC									
								Pres Type**		I	I									
								Lab Only:												
1	TT-1 @ 4'	9/30/2014	1005	S			1			X	X									
2	TT-1 @ 8'	9/30/2014	1010	S			1			X	X									
3	TT-2 @ 2'	9/30/2014	1030	S			1			X	X									
4	TT-2 @ 4'	9/30/2014	1035	S			1			X	X									
5	TT-2 @ 6'	9/30/2014	1040	S			1			X	X									
6	TT-3 @ 4'	9/30/2014	1100	S			1			X	X									
7	TT-3 @ 8'	9/30/2014	1110	S			1			X	X									
8	TT-4 @ 2'	9/30/2014	1130	S			1			X	X									
9	TT-4 @ 6'	9/30/2014	1140	S			1			X	X									
0	TT-5 @ 4'	9/30/2014	1230	S			1			X	X									

* Container Type Codes

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

Other _____

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

** Preservative Type Codes

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

^ Matrix Type Codes

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

Other _____

REMARKS

Hold for BTEX

Rush TPH 1hr TAT

Reg. Program / Clean-up Std	STATE for Certs & Regs	QA/QC Level & Certification	EDDs	COC & Labels	Coolers Temp °C
CTLs TRRP DW NPDES LPST DryCln Other:	FL TX GA NC SC NJ PA OK LA AL NM Other:	1 **2** 3 4 CLP AFCEE QAPP NELAC DoD-ELAP Other:	ADaPT SEDD ERPIMS XLS Other:	Match Incomplete Absent Unclear	1 2 3 0.7

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1		Basin Env.	10/2/14	0955	Rexler Rosendo	SMS	10-2-14	9:55
2								
3								
4					B. Hartman	Xenco	10-3-14	12:30

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

C.O.C. Serial #

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

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

Revision Date: Nov 12, 2009

CHAIN OF CUSTODY RECORD

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

LAB W.O #: 494567

Field billable Hrs :

Company:	Basin Environmental Service Technologies, LLC	Phone:	(575)396-2378
Address:	3100 Plains Hwy.	Fax:	(575)396-1429
City:	Lovington	State: NM	Zip: 88260
PM/Attn:	Ben Arguijo	Email:	bjarguijo@basinenv.com
Project ID:	Former Maljamar Station SRS HD0-95-61	PO#:	PAA-C. Bryant
Invoice To:	Camille Bryant Plains All American	Quote #:	

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

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

Sampler Name: Ben J. Arguijo

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

ANALYSES REQUESTED

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Cont Type * VC	Example Volatiles by 8260	TPH	Chloride									Hold Sample (CALL ___) Run PAH on Highest TPH ___ Only if
								Pres Type**		I	I									
								# Cont	Lab Only:											
1	TT-5 @ 8'	9/30/2014	1240	S			1			X	X									
2	TT-5 @ 14'	9/30/2014	1255	S			1			X	X									
3	TT-6 @ 4'	9/30/2014	1315	S			1			X	X									
4	TT-6 @ 7'	9/30/2014	1325	S			1			X	X									
5	TT-7 @ 2'	9/30/2014	1350	S			1			X	X									
6	TT-7 @ 6'	9/30/2014	1400	S			1			X	X									
7	TT-8 @ 4'	9/30/2014	1430	S			1			X	X									
8	TT-8 @ 9.5'	9/30/2014	1445	S			1			X	X									
9	TT-9 @ 2'	9/30/2014	1505	S			1			X	X									
0	TT-9 @ 4'	9/30/2014	1510	S			1			X	X									

* Container Type Codes

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

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

** Preservative Type Codes

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

^ Matrix Type Codes

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

REMARKS

Hold for BTEX
Rush TPH 7/16

Reg. Program / Clean-up Std	STATE for Certs & Regs	QA/QC Level & Certification	EDDs	COC & Labels	Coolers Temp °C
CTLs TRRP DW NPDES LPST DryCln Other:	FL TX GA NC SC NJ PA OK LA AL NM Other:	1 **2** 3 4 CLP AFCEE QAPP NELAC DoD-ELAP Other:	ADaPT SEDD ERPIMS XLS Other:	Match Incomplete Absent Unclear	1 2 3 0.7

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1		Basin Env.	10/2/14	0955	Kevin Rosenda	MS	10-2-14	9:55
2								
3								
4						Xenco	10-3-14	12:30

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

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Page 3 of 3

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ANALYSES REQUESTED

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								Cont Type * VC		GC	GC								
								Pres Type**		I	I								
								Lab Only:											
1	TT-10 @ 4'	9/30/2014	1525	S			1			X	X								
2	TT-10 @ 8'	9/30/2014	1540	S			1			X	X								
3	TT-11 @ 2'	9/30/2014	1605	S			1			X	X								
4	TT-11 @ 4'	9/30/2014	1610	S			1			X	X								
5																			
6																			
7																			
8																			
9																			
0																			

* Container Type Codes

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Other _____

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

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

^ Matrix Type Codes

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

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3								
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Non-Conformances found?			
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FTS Service Centers: Atlanta 770-449-8800 Lakeland 863-646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099

 Revision Date: Nov 12, 2009

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 10/03/2014 12:30:00 PM

Work Order #: 494567

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

Temperature Measuring device used :

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 10/03/2014

Checklist reviewed by: Kelsey Brooks Date: 10/03/2014