Received 5/15/15 NMOCD Artesia

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

fAB1514737885
nAB1514738018

Release Notification and Corrective Action

AMENDED

OPERATOR

☒ Initial Report ☐ Final Repor

Name of Company	Plains Pipeline, LP 34091	Contact	Camille Bryant
Address	2530 State Hwy. 214, Denver City, TX 79323	Telephone No.	(575) 441-1099
Facility Name	Palladium 7-1 4-Inch Poly	Facility Type	4-Inch Poly Pipeline

Surface Owner	Mineral Owner	Lease No.
BLM		

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	5	24S	31E					Eddy

Latitude N 32.2519600° Longitude W 103.800570°

NATURE OF RELEASE

Type of Release: Crude Oil	Volume of Release: >5 bbls	Volume Recovered: 0 bbls
Source of Release: 4-Inch Poly Pipeline	Date and Hour of Occurrence: 03/01/2013 @ 10:51	Date and Hour of Discovery: 03/01/2013 @ 10:51
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Pinhole developed in 4-inch poly pipeline. The pipeline was de-oiled and the damaged portion of the pipeline was replaced.

Describe Area Affected and Cleanup Action Taken. The release was initially believed to be 0.5 barrel; however, on delineation activities the release was amended to greater than five barrels and reported to the NMOCD and BLM. The visually impacted area measured approximately 100' x 60'.The impacted area will be remediated as per applicable NMOCD guidelines.

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

Signature: Camille Bryant

Printed Name: Camille Bryant

Title: Remediation Coordinator

E-mail Address: cjbryant@paalp.com

Date: 5/6/2015 Phone: (575) 441-1099

OIL CONSERVATION DIVISION

Approved by District Supervisor:

Approval Date: 5/26/15 Expiration Date: NA

Conditions of Approval: Attached ☐

Remediation per O.C.D. Rules & Guidelines
SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 5/28/15

2RP-318

* Attach Additional Sheets If Necessary

From:	Dade, Randy, EMNRD
To:	Patterson, Heather, EMNRD
Subject:	FW:
Date:	Tuesday, May 19, 2015 9:54:18 AM
Attachments:	Palladium 7-1_WorkPlan.pdf

From: Ben J. Arguijo [mailto:bjarguijo@basinenv.com]
Sent: Monday, May 18, 2015 8:14 AM
To: Dade, Randy, EMNRD; Randy Pair
Cc: Camille J. Bryant; Bobby Blackwood; sjwalters@basinenv.com
Subject:

Mr. Dade and Mr. Pair,

Attached please find an *Environmental Site Summary & Spill Remediation Plan* (Work Plan) for the Plains All American Pipeline, LP (Plains), release site known as Palladium 7-1 4-Inch Poly.

As has been discussed on-site and via telephone, the crude oil release occurred in March 2013 and was initiall estimated to be approximately one-half of a barrel (0.5 bbl) in size. The site fell through the cracks as a result of personnel transitions but was revisited last month. Laboratory analytical results and field-screens from samples collected during delineation activities conducted on April 16 and April 29, 2015, indicated the release was actually greater than or equal to five barrels (=5 bbls). The release was subsequently reported to both the NMOCD Artesia District Office and the BLM Carslbad Field Office. An amended C-141 is included in the attached Work Plan.

Plains and Basin Environmental request permission to commence the following delineation activities described in the Work Plan posthaste:

"The area around delineation trench TT-1 will be excavated to approximately five feet (5') bgs to allow access for heavy equipment to further advance the trench. The trench will be advanced to the extent practicable. Soil samples will be collected at one (1) to two-foot (2') vertical intervals and field-screened with a PID. A representative selection of samples will be submitted to the laboratory for confirmatory analyses of BTEX, TPH, and/or chloride concentrations using the EPA laboratory analytical methods described above. If vertical delineation cannot be achieved via trenching, a drilling rig will be employed to advance one (1) soil boring (SB-1) in the area of trench TT-1."

Please review the Work Plan at your earliest convenience. I look forward to hearing back from you.

Thank you for your time and consideration.

Respectfully,
Ben J. Arguijo

Ben J. Arguijo
Project Manager

Basin Environmental
3100 Plains Hwy.
P.O. Box 301
Lovington, NM 88260
p:(575)396-2378 m:(806)549-9597
f:(575)396-1429
bjarguijo@basinenv.com

Basin Environmental Service Technologies, LLC

Environmental Site Summary & Spill Remediation Plan

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

Site Name: Palladium 7-1 4-Inch Poly **NMOCD Reference#:**

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

Unit Letter: "C" (NE/NW) **Section:** 5 **Township:** 24S **Range:** 31E **County:** Eddy **GPS Coordinates:** 32.251960 **N** -103.800570 **W**

Depth to Ground Water: ≈ 285' - 290' **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: 3/1/2013 **Type of Release:** Crude Oil **Approximate Volume of Release:** ≥ 5 bbls

Background Information:

On March 1, 2013, Plains All American Pipeline, LP (Plains), discovered a release on its Palladium 7-1 pipeline. The release was attributed to a manufacturing defect, which caused a pinhole leak to develop in the four-inch (4"), polyethylene pipeline. The release was initially estimated to be approximately one-half of a barrel (0.5 bbl) of crude oil. However, delineation activities conducted in April 2015 indicated the size of the release was greater than or equal to five barrels (≥5 bbls). The release was subsequently reported to the New Mexico Oil Conservation Division's (NMOCD) Artesia District Office and the United States Department of the Interior - Bureau of Land Management's (BLM) Carlsbad Field Office. The "Release Notification & Corrective Action" (Form C-141) indicated the release impacted an area of pastureland measuring approximately one hundred feet (100') in length and sixty feet (60') in width. The Form C-141 is provided as Attachment #1. A "Site Location Map" is provided as Attachment #2. General photographs of the release site are provided in Attachment #5.

Summary of Field Activities:

On April 16, 2015, Basin Environmental commenced delineation activities at the site. A hand-augered soil boring (HA-1) was advanced near the release point to investigate the vertical extent of impacted soil. The soil boring was advanced in six-inch (6") to one-foot (1') intervals to approximately seven and one-half feet (7.5') below ground surface (bgs). Soil samples were field-screened with a photo-ionization detector (PID), and representative confirmation samples were submitted to Xenco Laboratories in Odessa, Texas, for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and total petroleum hydrocarbons (TPH) concentrations using Environmental Protection Agency (EPA) Methods SW 846-8021b and SW 846-8015M, respectively. Laboratory analytical results indicated additional vertical delineation of the release was required.

On April 29, 2015, a series of five (5) delineation trenches (TT-1, N, S, E, and W) were advanced to further investigate the horizontal and vertical extent of impacted soil. Trench TT-1 was advanced in the area represented by hand-augered soil boring HA-1. Trenches N, S, E, and W were advanced near the north, south, east, and west boundaries, respectively, of the visibly impacted area. The trenches were advanced in one-foot (1') to three-foot (3') intervals to total depths ranging from approximately five feet (5') bgs in trenches N, S, E, and W to approximately twenty feet (20') bgs in trench TT-1. Soil samples were field-screened with a PID, and confirmation samples were submitted to the laboratory for analysis of TPH and/or BTEX concentrations. Sample TT-1 @ 20' was also analyzed for chloride using EPA Method 300.1.

Laboratory analytical results indicate vertical delineation was not achieved in trenches TT-1 and S. Additional vertical delineation is required in the areas represented by these trenches. Horizontal and vertical delineation to the north, east, and west of the release point was achieved.

Locations of the hand-augered soil boring, delineation trenches, and soil samples are depicted in Attachment #3, "Site & Sample Location Map". Laboratory analytical results are summarized in Attachment #4, "Concentrations of Benzene, BTEX, TPH & Chloride in Soil", and analytical reports are provided in Attachment #6.

Basin Environmental Service Technologies, LLC

Environmental Site Summary & Spill Remediation Plan

Proposed Activities:

• The area around delineation trench TT-1 will be excavated to approximately five feet (5') bgs to allow access for heavy equipment to further advance the trench. The trench will be advanced to the extent practicable. Soil samples will be collected at one (1) to two-foot (2') vertical intervals and field-screened with a PID. A representative selection of samples will be submitted to the laboratory for confirmatory analyses of BTEX, TPH, and/or chloride concentrations using the EPA laboratory analytical methods described above. If vertical delineation cannot be achieved via trenching, a drilling rig will be employed to advance one (1) soil boring (SB-1) in the area of trench TT-1.

• The horizontal limits of the excavation will be determined by field-screening using a PID and/or visual/olfactory senses. Confirmation soil samples will be collected at approximately fifty-foot (50') horizontal intervals and submitted to the laboratory for analysis of BTEX, TPH, and/or chloride concentrations.

• Due to safety and environmental concerns, the vertical extent of the excavation will be limited to a maximum depth of ten feet (10') bgs, and the walls of the excavation will be benched to prevent collapse. The eastern extent of the excavation will be limited by the presence of an eight-inch (8"), steel natural gas pipeline adjacent to the release site. In addition, the excavation will be fenced off during periods of inactivity to prevent injury to oilfield personnel, livestock, and wildlife.

• Excavated soil will be stockpiled on-site on six (6) mil polypropylene plastic, pending transfer to an NMOCD-permitted facility for disposal.

• In areas exhibiting contaminant concentrations above the NMOCD recommended remediation action levels at ten feet (10') bgs, the floor of the excavation will be fitted with a twenty (20) mil, impermeable, polyethylene plastic liner. A cushion of sand will be installed approximately six inches (6") both above and below the liner to protect it during installation and backfilling activities. This engineered control will serve to inhibit vertical migration of contaminants both upward to the vegetative zone and downward to the underlying groundwater. The remaining portion of the excavation will be backfilled with locally purchased, non-impacted material, compacted, and contoured to fit the surrounding topography.

• Following the proposed remediation activities, the disturbed area will be seeded with a BLM-approved seed mix.

Attachments:

Attachment #1: Release Notification & Corrective Action (Form C-141)
Attachment #2: Site Location Map
Attachment #3: Site & Sample Location Map
Attachment #4: Concentrations of Benzene, BTEX, TPH & Chloride in Soil
Attachment #5: Photographs
Attachment #6: Laboratory Analytical Reports

5/8/2015
Ben J. Arguijo
Project Manager

Attachment #1

Release Notification &

Corrective Action (Form C-141)

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

AMENDED

OPERATOR

☒ Initial Report ☐ Final Repor

Name of Company	Plains Pipeline, LP	Contact	Camille Bryant
Address	2530 State Hwy. 214, Denver City, TX 79323	Telephone No.	(575) 441-1099
Facility Name	Palladium 7-1 4-Inch Poly	Facility Type	4-Inch Poly Pipeline

Surface Owner	Mineral Owner	Lease No.
BLM		

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	5	24S	31E					Eddy

Latitude N 32.2519600° Longitude W 103.800570°

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release >5 bbls	Volume Recovered 0 bbls
Source of Release 4-Inch Poly Pipeline	Date and Hour of Occurrence 03/01/2013 @ 10:51	Date and Hour of Discovery 03/01/2013 @ 10:51
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Pinhole developed in 4-inch poly pipeline. The pipeline was de-oiled and the damaged portion of the pipeline was replaced.

Describe Area Affected and Cleanup Action Taken. The release was initially believed to be 0.5 barrel; however, on delineation activities the release was amended to greater than five barrels and reported to the NMOCD and BLM. The visually impacted area measured approximately 100' x 60'.The impacted area will be remediated as per applicable NMOCD guidelines.

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

Signature: Camille Bryant

Printed Name: Camille Bryant

Title: Remediation Coordinator

E-mail Address: cjbryant@paalp.com

Date: 5/6/2015 Phone: (575) 441-1099

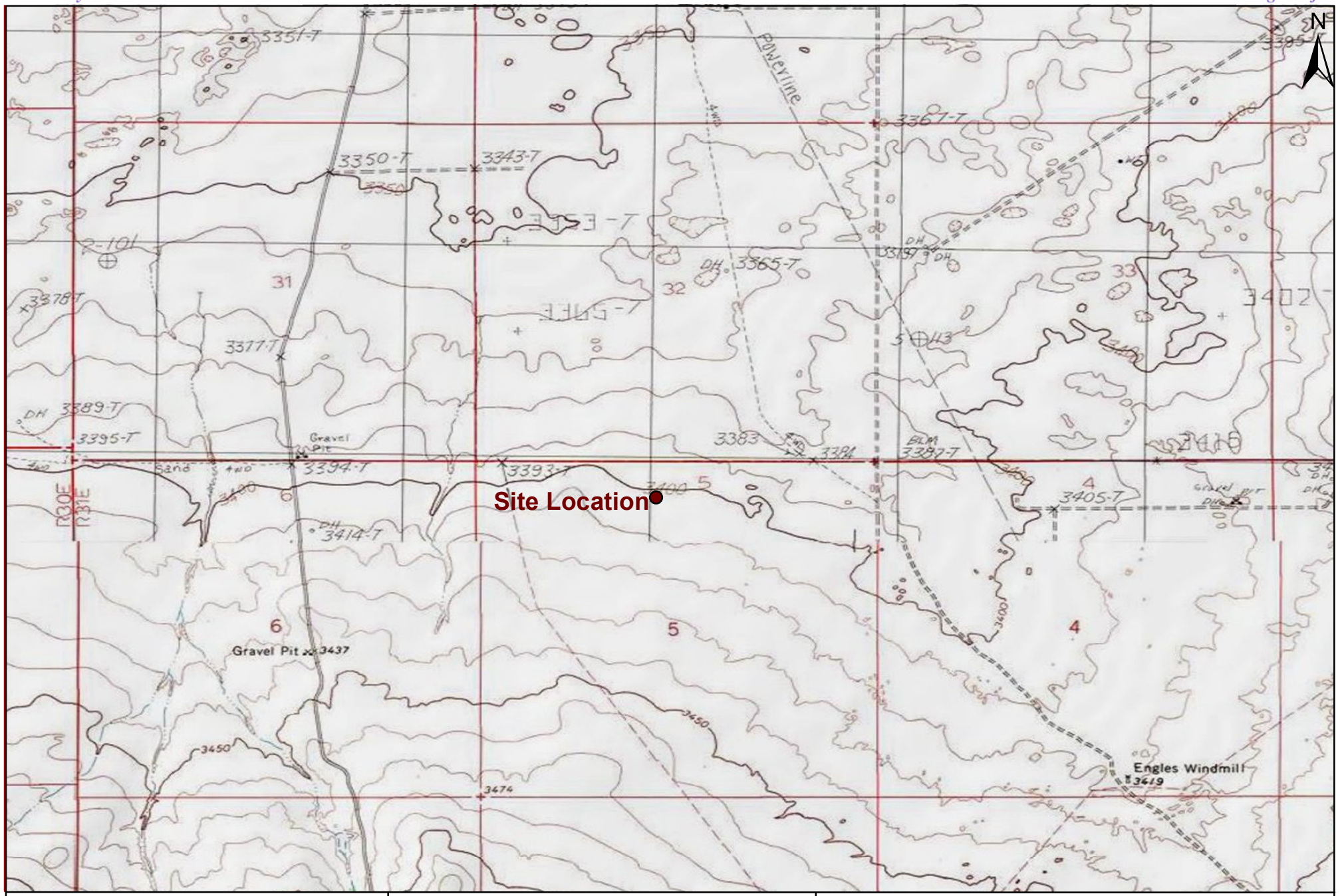
Attach Additional Sheets If Necessary

OIL CONSERVATION DIVISION

Approved by District Supervisor:

Approval Date: Expiration Date:

Conditions of Approval: Attached ☐

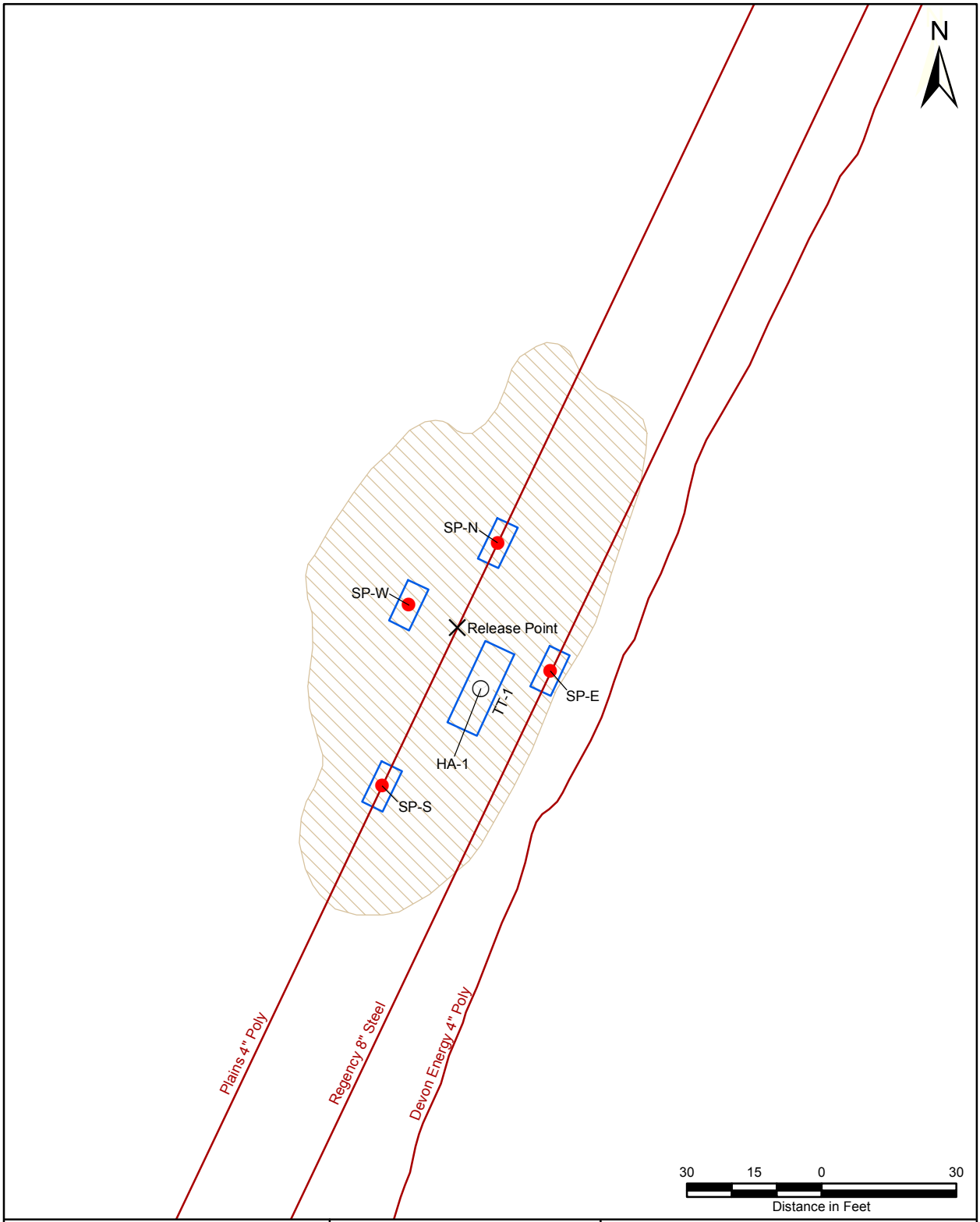


1,000 500 0 1,000 2,000
Distance in Feet

Attachment #2
Site Location Map
Plains Pipeline, LP
Palladium 7-1 4-Inch Poly
Eddy County, New Mexico
Plains SRS #: 2013-044

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

Drawn By: BJA	Checked By: BRB
May 8, 2015	Scale: 1" = 2,000'



Legend

- Delineation Trench
- Pipeline
- Impacted Area
- Release Point
- Sample Location

Attachment #3
Site & Sample Location Map
Plains Pipeline, LP
Palladium 7-1 4-Inch Poly
Eddy County, New Mexico
Plains SRS #: 2013-044

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

Drawn By: BJA	Checked By: BRB
May 8, 2015	Scale: 1" = 30'

ATTACHMENT #4
CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

PLAINS ALL AMERICAN PIPELINE, LP
PALLADIUM 7-1 4-INCH POLY
EDDY COUNTY, NEW MEXICO
PLAINS SRS #: 2013-044

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030							METHOD: 8015M			TPH C_6-C_{35} (mg/Kg)	4500 Cl-B
				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)
HA-1 @ 0.5'	0.5'	4/16/2015	In-Situ	0.122	0.387	0.0531	0.184	0.0486	0.233	0.795	740	10,600	286	**11,600**	-
HA-1 @ 1'	1'	4/16/2015	In-Situ	0.0377	0.204	0.0512	0.179	0.0361	0.215	0.508	742	5,990	213	**6,950**	-
HA-1 @ 3'	3'	4/16/2015	In-Situ	-	-	-			-	-	552	3,680	102	4,330	-
HA-1 @ 5'	5'	4/16/2015	In-Situ	-	-	-			-	-	852	4,100	105	**5,060**	-
HA-1 @ 7.5'	7.5'	4/16/2015	In-Situ	-	-	-			-	-	6,380	14,800	376	**21,600**	-
TT-1 @ 13'	13'	4/29/2015	In-Situ	<0.0540	6.12	4.54	15.7	5.56	21.3	31.9	3,470	8,460	260	**12,200**	-
TT-1 @ 20'	20'	4/29/2015	In-Situ	<0.107	16.4	13.7	45.8	17.0	62.8	**92.9**	1,750	5,330	167	**7,250**	3.57
SP-N	4.5'	4/29/2015	In-Situ	-	-	-	-	-	-	-	30.2	1,600	55.6	1,690	-
SP-S	4.5'	4/29/2015	In-Situ	-	-	-	-	-	-	-	337	4,660	226	**5,220**	-
SP-E	5'	4/29/2015	In-Situ	-	-	-	-	-	-	-	<15.5	66.6	<15.5	66.6	-
SP-W	5'	4/29/2015	In-Situ	-	-	-	-	-	-	-	<17.0	108	<17.0	108	-
NMOCD Recommended Remediation Action Level				**10**						**50**				**5,000**	**1,000**

- = Not analyzed.

Attachment #5

Photographs

Palladium 7-1 4-Inch Poly - Release Site Aerial

Palladium 7-1 4-Inch Poly – Advancement of Delineation Trench TT-1

Palladium 7-1 4-Inch Poly – Delineation Trench TT-1
(Staining Visible on Wall of Trench)

Attachment #6

Laboratory Analytical Reports

Analytical Report 506301 & 506397

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Palladium 7-1 4-Inch Poly

SRS#2013-044

24-APR-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-18), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

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

24-APR-15

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

Reference: XENCO Report No(s): **506301, 506397**
Palladium 7-1 4-Inch Poly
Project Address:

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) 506301. 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. 506301 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

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

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

Sample Cross Reference 506301, 506397

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
HA-1 @0.5'	S	04-16-15 09:30	- .5 ft	506301-001
HA-1 @ 1'	S	04-16-15 09:45	- 1 ft	506301-002
HA-1 @ 3'	S	04-16-15 10:15	- 3 ft	506397-001
HA-1 @ 5'	S	04-16-15 10:45	- 5 ft	506397-002
HA-1 @ 7' 6"	S	04-16-15 11:35	7 - 6" ft	506397-003

Version: 1.%

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Palladium 7-1 4-Inch Poly

Project ID: *SRS#2013-044*
Work Order Number(s): *506301,506397*

Report Date: *24-APR-15*
Date Received: *04/18/2015*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 506301

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Palladium 7-1 4-Inch Poly

Project Id: SRS#2013-044
Contact: Ben Arguijo
Project Location:

Date Received in Lab: Sat Apr-18-15 01:45 pm
Report Date: 24-APR-15
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	506301-001		506301-002					
	Field Id:	HA-1 @0.5'		HA-1 @ 1'					
	Depth:	.5 ft		1 ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Apr-16-15 09:30		Apr-16-15 09:45					
BTEX by EPA 8021	***Extracted:***	Apr-20-15 16:00		Apr-20-15 16:00					
	Analyzed:	Apr-21-15 06:23		Apr-21-15 06:06					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		0.122	0.00100	0.0377	0.00101				
Toluene		0.387	0.00201	0.204	0.00202				
Ethylbenzene		0.0531	0.00100	0.0512	0.00101				
m_p-Xylenes		0.184	0.00201	0.179	0.00202				
o-Xylene		0.0486	0.00100	0.0361	0.00101				
Xylenes, Total		0.233	0.00100	0.215	0.00101				
Total BTEX		0.795	0.00100	0.508	0.00101				
Percent Moisture	***Extracted:***								
	Analyzed:	Apr-20-15 17:00		Apr-20-15 17:00					
	Units/RL:	%	RL	%	RL				
Percent Moisture		1.00	1.00	1.61	1.00				
TPH by SW8015 Mod	***Extracted:***	Apr-20-15 15:00		Apr-20-15 15:00					
	Analyzed:	Apr-21-15 08:25		Apr-21-15 09:08					
	Units/RL:	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		740	75.8	742	76.1				
C12-C28 Diesel Range Hydrocarbons		10600	75.8	5990	76.1				
C28-C35 Oil Range Hydrocarbons		286	75.8	213	76.1				
Total TPH		11600	75.8	6950	76.1				

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

Version: 1.%

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 506397

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Palladium 7-1 4-Inch Poly

Project Id: SRS#2013-044
Contact: Ben Arguijo
Project Location:

Date Received in Lab: Tue Apr-21-15 09:45 am
Report Date: 22-APR-15
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	506397-001		506397-002		506397-003			
	Field Id:	HA-1 @ 3'		HA-1 @ 5'		HA-1 @ 7' 6"			
	Depth:	3 ft		5 ft		7-6" ft			
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Apr-16-15 10:15		Apr-16-15 10:45		Apr-16-15 11:35			
Percent Moisture	**Extracted:**								
	Analyzed:	Apr-21-15 17:00		Apr-21-15 17:00		Apr-21-15 17:00			
	Units/RL:	%	RL	%	RL	%	RL		
Percent Moisture		4.18	1.00	10.5	1.00	14.1	1.00		
TPH by SW8015 Mod	**Extracted:**	Apr-21-15 13:00		Apr-21-15 13:00		Apr-21-15 13:00			
	Analyzed:	Apr-21-15 17:22		Apr-21-15 17:44		Apr-21-15 18:06			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
C6-C12 Gasoline Range Hydrocarbons		552	15.6	852	16.7	6380	86.9		
C12-C28 Diesel Range Hydrocarbons		3680	15.6	4100	16.7	14800	86.9		
C28-C35 Oil Range Hydrocarbons		102	15.6	105	16.7	376	86.9		
Total TPH		4330	15.6	5060	16.7	21600	86.9		

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

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 **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: Palladium 7-1 4-Inch Poly

Work Orders : 506301,506397 **Project ID:** SRS#2013-044

Lab Batch #: 966421 **Sample:** 506301-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/21/15 06:06

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 966421 **Sample:** 506301-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/21/15 06:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 966445 **Sample:** 506301-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/21/15 08:25

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	63.9	50.0	128	70-135	

Lab Batch #: 966445 **Sample:** 506301-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/21/15 09:08

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.8	101	70-135	
o-Terphenyl	61.7	49.9	124	70-135	

Lab Batch #: 966445 **Sample:** 691502-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/20/15 22:58

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.7	100	97	70-135	
o-Terphenyl	48.3	50.0	97	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.

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Orders : 506301,506397 **Project ID:** SRS#2013-044

Lab Batch #: 966421 **Sample:** 691490-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/21/15 00:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 966445 **Sample:** 691502-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/20/15 23:21

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	54.3	50.0	109	70-135	

Lab Batch #: 966421 **Sample:** 691490-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/21/15 00:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 966445 **Sample:** 691502-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/20/15 23:44

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	54.6	50.0	109	70-135	

Lab Batch #: 966421 **Sample:** 691490-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/21/15 01:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0330	0.0300	110	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Orders : 506301,506397 **Project ID:** SRS#2013-044

Lab Batch #: 966421 **Sample:** 506270-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/21/15 01:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0350	0.0300	117	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 966445 **Sample:** 506270-010 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/21/15 03:53

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.9	124	70-135	
o-Terphenyl	38.4	50.0	77	70-135	

Lab Batch #: 966421 **Sample:** 506270-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/21/15 01:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0330	0.0300	110	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 966445 **Sample:** 506270-010 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/21/15 04:16

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.8	124	70-135	
o-Terphenyl	36.9	49.9	74	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.

Version: 1.%

BS / BSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 506301,506397 **Project ID:** SRS#2013-044

Analyst: ARM **Date Prepared:** 04/20/2015 **Date Analyzed:** 04/21/2015

Lab Batch ID: 966421 **Sample:** 691490-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0953	95	0.100	0.0962	96	1	70-130	35	
Toluene	<0.00200	0.100	0.0975	98	0.100	0.0980	98	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.101	101	0.100	0.101	101	0	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.202	101	0.200	0.201	101	0	70-135	35	
o-Xylene	<0.00100	0.100	0.101	101	0.100	0.101	101	0	71-133	35	

Analyst: ARM **Date Prepared:** 04/20/2015 **Date Analyzed:** 04/20/2015

Lab Batch ID: 966445 **Sample:** 691502-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	1060	106	1000	1010	101	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1010	101	1000	1000	100	1	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

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order # : 506301,506397 **Project ID:** SRS#2013-044

Lab Batch ID: 966421 **QC- Sample ID:** 506270-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/21/2015 **Date Prepared:** 04/20/2015 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00128	0.128	0.127	99	0.127	0.113	89	12	70-130	35	
Toluene	<0.00255	0.128	0.111	87	0.127	0.103	81	7	70-130	35	
Ethylbenzene	<0.00128	0.128	0.117	91	0.127	0.107	84	9	71-129	35	
m_p-Xylenes	<0.00255	0.255	0.225	88	0.255	0.209	82	7	70-135	35	
o-Xylene	<0.00128	0.128	0.128	100	0.127	0.113	89	12	71-133	35	

Lab Batch ID: 966445 **QC- Sample ID:** 506270-010 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/21/2015 **Date Prepared:** 04/20/2015 **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	<16.3	1090	1130	104	1090	1100	101	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<16.3	1090	1240	114	1090	1300	119	5	70-135	35	

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

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

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

Sample Duplicate Recovery

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 506301,506397

Lab Batch #: 966423 **Project ID:** SRS#2013-044

Date Analyzed: 04/20/2015 17:00 **Date Prepared:** 04/20/2015 **Analyst:** WRU

QC- Sample ID: 506293-021 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	9.56	9.94	4	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

Version: 1.%

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 04/18/2015 01:45:00 PM

Work Order #: 506301,506397

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: 04/20/2015

Checklist reviewed by: Date: 04/20/2015

CHAIN OF CUSTODY RECORD

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

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LAB W.O # : 500301

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 J. Arguijo	Email:	bjarguijo@basinenv.com
Project ID:	Palladium 7-1 4-Inch Poly SRS #: 2013-044	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: Steve Taylor

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

ANALYSES REQUESTED

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Cont Type * VC	Example Volatiles by 8260	TPH	BTEX	Chloride								Hold Sample (CALL ___) Run PAH on Highest TPH ___ Only if
								Pres Type**		I	I	I								
								# Cont	Lab Only:											
1	HA-1 @ 0.5'	4/16/2015	0930	S			1			X	X									
2	HA-1 @ 1'	4/16/2015	0945	S			1			X	X	X 4/21/15								
3																				
4																				
5																				
6																				
7																				
8																				
9																				
0																				

* Container Type Codes

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

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

** Preservative Type Codes

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

^ Matrix Type Codes

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

REMARKS

Reg. Program / Clean-up Std	STATE for Certs & Regs	QA/QC Level & Certification	EDDs	COC & Labels	Coolers Temp °C
TLs TRRP DW NPDES LPST DryCln	FL TX GA NC SC NJ PA OK LA	1 **2** 3 4 CLP AFCEE QAPP	ADaPT SEDD ERPIMS	Match Incomplete	1 2.5°C 2 3
her:	AL NM Other:	NELAC DoD-ELAP Other:	XLS Other:	Absent Unclear	

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	[signature]	Basin Env	4/16/15	4:55pm	[signature]	MS	4/16/15	455
2					Julian M	Xenco	4-18-15	13:45
3								
4								

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

C.O.C. Serial #

CHAIN OF CUSTODY RECORD

XENCO Laboratories — Environmental Asbestos Radiochemistry ;roool-c

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

Page 1 of 1

LAB W.O #: 506397

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:	Palladium 7-1 4-inch Poly SRS #: 2013-044	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: Steve Taylor

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

ANALYSES REQUESTED

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Cont Type * VC	Example Volatiles by 8260	TPH	BTEX	Chloride								Hold Sample (CALL ___) Run PAH on Highest TPH ___ Only if
								Pres Type**		I	I	I	I	I	I	I	I	I	I	
								# Cont	Lab Only:											
1	HA-1@3'	4/16/2015	1015	S			1			X	HOLD									
2	HA-1@5'	4/16/2015	1045	S			1			X										
3	HA-1@7' 6"	4/16/2015	1135	S			1			X										
4																				
5																				
6																				
7																				
8																				
9																				
10																				

* Container Type Codes

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

Other _____

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

** Preservative Type Codes

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

^ Matrix Type Codes

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

Other _____

REMARKS

****RUSH TPH on Surface Samples****

Reg. Program / Clean-up Std	STATE for Certs & Regs	QA/QC Level & Certification	EDDs	COC & Labels	Coolers Temp °C
TLs 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 5 2 3

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	Steve Taylor	Basin Env	4/17/15	5:00	S Butler	MS	4/17/15	5:00
2					B Rahman	Xenco	4/21/15	09:45
3								
4								

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

C.O.C. Serial #

XENCO 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

XENCO 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: 04/18/2015 01:45:00 PM

Work Order #: 506301, 506397

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: 04/20/2015

Checklist reviewed by: Date: 04/20/2015

Analytical Report 507094

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Palladium 7-1 4-Inch Poly

SRS#2013-044

08-MAY-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-18), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

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

08-MAY-15

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

Reference: XENCO Report No(s): **507094**
Palladium 7-1 4-Inch Poly
Project Address:

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) 507094. 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. 507094 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

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

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

Sample Cross Reference 507094

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TT-1 @13'	S	04-29-15 11:49		507094-001
TT-1 @20'	S	04-29-15 13:00		507094-002
SP-N	S	04-29-15 14:15		507094-003
SP-S	S	04-29-15 14:05		507094-004
SP-E	S	04-29-15 14:00		507094-005
SP-W	S	04-29-15 14:10		507094-006

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Palladium 7-1 4-Inch Poly

Project ID:	*SRS#2013-044*	Report Date:	*08-MAY-15*
Work Order Number(s):	*507094*	Date Received:	*05/01/2015*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Hits Summary 507094

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id : **TT-1 @13'**
Lab Sample Id : 507094-001

Matrix : Soil
Date Collected : 04.29.15 11.49
Date Received : 05.01.15 12.00

% Moisture : 7.49
Basis : Dry Weight

Analytical Method : BTEX by EPA 8021
Seq Number 967656

Prep Method: SW5030B
Date Prep: 05.06.15 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Toluene	108-88-3	6.12	mg/kg	05.07.15 15.57		50
Ethylbenzene	100-41-4	4.54	mg/kg	05.07.15 15.57		50
m_p-Xylenes	179601-23-1	15.7	mg/kg	05.07.15 15.57		50
o-Xylene	95-47-6	5.56	mg/kg	05.07.15 15.57		50
Xylenes, Total	1330-20-7	21.3	mg/kg	05.07.15 15.57		50
Total BTEX		31.9	mg/kg	05.07.15 15.57		50

Analytical Method : TPH by SW8015 Mod
Seq Number 967301

Prep Method: TX1005P
Date Prep: 05.01.15 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C12 Gasoline Range Hydrocarbons	PHC612	3470	mg/kg	05.02.15 11.14		5
C12-C28 Diesel Range Hydrocarbons	PHCG1028	8460	mg/kg	05.02.15 11.14		5
C28-C35 Oil Range Hydrocarbons	PHCG2835	260	mg/kg	05.02.15 11.14		5
Total TPH	PHC635	12200	mg/kg	05.02.15 11.14		5

Hits Summary 507094

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id : **TT-1 @20'**
Lab Sample Id : 507094-002

Matrix : Soil
Date Collected : 04.29.15 13.00
Date Received : 05.01.15 12.00

% Moisture : 6.6
Basis : Dry Weight

Analytical Method : BTEX by EPA 8021
Seq Number 967656

Prep Method: SW5030B
Date Prep: 05.06.15 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Toluene	108-88-3	16.4	mg/kg	05.07.15 16.14		100
Ethylbenzene	100-41-4	13.7	mg/kg	05.07.15 16.14		100
m_p-Xylenes	179601-23-1	45.8	mg/kg	05.07.15 16.14		100
o-Xylene	95-47-6	17.0	mg/kg	05.07.15 16.14		100
Xylenes, Total	1330-20-7	62.8	mg/kg	05.07.15 16.14		100
Total BTEX		92.9	mg/kg	05.07.15 16.14		100

Analytical Method : Inorganic Anions by EPA 300/300.1
Seq Number 967292

Prep Method: E300P
Date Prep: 05.01.15 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3.57	mg/kg	05.02.15 03.37		1

Analytical Method : TPH by SW8015 Mod
Seq Number 967301

Prep Method: TX1005P
Date Prep: 05.01.15 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C12 Gasoline Range Hydrocarbons	PHC612	1750	mg/kg	05.02.15 11.35		5
C12-C28 Diesel Range Hydrocarbons	PHCG1028	5330	mg/kg	05.02.15 11.35		5
C28-C35 Oil Range Hydrocarbons	PHCG2835	167	mg/kg	05.02.15 11.35		5
Total TPH	PHC635	7250	mg/kg	05.02.15 11.35		5

Sample Id : **SP-N**
Lab Sample Id : 507094-003

Matrix : Soil
Date Collected : 04.29.15 14.15
Date Received : 05.01.15 12.00

% Moisture : 6.06
Basis : Dry Weight

Analytical Method : TPH by SW8015 Mod
Seq Number 967301

Prep Method: TX1005P
Date Prep: 05.01.15 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C12 Gasoline Range Hydrocarbons	PHC612	30.2	mg/kg	05.02.15 11.56		1
C12-C28 Diesel Range Hydrocarbons	PHCG1028	1600	mg/kg	05.02.15 11.56		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	55.6	mg/kg	05.02.15 11.56		1
Total TPH	PHC635	1690	mg/kg	05.02.15 11.56		1

Hits Summary 507094

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id : **SP-S** Matrix : Soil % Moisture : 2.4
Lab Sample Id : 507094-004 Date Collected : 04.29.15 14.05 Basis : Dry Weight
Date Received : 05.01.15 12.00

Analytical Method : TPH by SW8015 Mod Prep Method: TX1005P
Seq Number 967301 Date Prep: 05.01.15 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C12 Gasoline Range Hydrocarbons	PHC612	337	mg/kg	05.02.15 13.00		1
C12-C28 Diesel Range Hydrocarbons	PHCG1028	4660	mg/kg	05.02.15 13.00		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	226	mg/kg	05.02.15 13.00		1
Total TPH	PHC635	5220	mg/kg	05.02.15 13.00		1

Sample Id : **SP-E** Matrix : Soil % Moisture : 3.62
Lab Sample Id : 507094-005 Date Collected : 04.29.15 14.00 Basis : Dry Weight
Date Received : 05.01.15 12.00

Analytical Method : TPH by SW8015 Mod Prep Method: TX1005P
Seq Number 967301 Date Prep: 05.01.15 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C12-C28 Diesel Range Hydrocarbons	PHCG1028	66.6	mg/kg	05.02.15 13.21		1
Total TPH	PHC635	66.6	mg/kg	05.02.15 13.21		1

Sample Id : **SP-W** Matrix : Soil % Moisture : 11.88
Lab Sample Id : 507094-006 Date Collected : 04.29.15 14.10 Basis : Dry Weight
Date Received : 05.01.15 12.00

Analytical Method : TPH by SW8015 Mod Prep Method: TX1005P
Seq Number 967301 Date Prep: 05.01.15 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C12-C28 Diesel Range Hydrocarbons	PHCG1028	108	mg/kg	05.02.15 13.43		1
Total TPH	PHC635	108	mg/kg	05.02.15 13.43		1

Certificate of Analysis Summary 507094

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Palladium 7-1 4-Inch Poly

Project Id: SRS#2013-044
Contact: Ben Arguijo
Project Location:

Date Received in Lab: Fri May-01-15 12:00 pm
Report Date: 08-MAY-15
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	507094-001		507094-002		507094-003		507094-004		507094-005		507094-006	
	Field Id:	TT-1 @13'		TT-1 @20'		SP-N		SP-S		SP-E		SP-W	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-29-15 11:49		Apr-29-15 13:00		Apr-29-15 14:15		Apr-29-15 14:05		Apr-29-15 14:00		Apr-29-15 14:10	
BTEX by EPA 8021	**Extracted:**	May-06-15 16:00		May-06-15 16:00									
	Analyzed:	May-07-15 15:57		May-07-15 16:14									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene		ND	0.0540	ND	0.107								
Toluene		6.12	0.108	16.4	0.214								
Ethylbenzene		4.54	0.0540	13.7	0.107								
m_p-Xylenes		15.7	0.108	45.8	0.214								
o-Xylene		5.56	0.0540	17.0	0.107								
Xylenes, Total		21.3	0.0540	62.8	0.107								
Total BTEX		31.9	0.0540	92.9	0.107								
Inorganic Anions by EPA 300/300.1	**Extracted:**			May-01-15 15:00									
	Analyzed:			May-02-15 03:37									
	Units/RL:			mg/kg	RL								
Chloride				3.57	2.14								
Percent Moisture	**Extracted:**												
	Analyzed:	May-01-15 17:00		May-01-15 17:00		May-01-15 17:00		May-01-15 17:00		May-01-15 17:00		May-01-15 17:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		7.49	1.00	6.60	1.00	6.06	1.00	2.40	1.00	3.62	1.00	11.9	1.00
TPH by SW8015 Mod	**Extracted:**	May-01-15 16:00		May-01-15 16:00		May-01-15 16:00		May-01-15 16:00		May-01-15 16:00		May-01-15 16:00	
	Analyzed:	May-02-15 11:14		May-02-15 11:35		May-02-15 11:56		May-02-15 13:00		May-02-15 13:21		May-02-15 13:43	
	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		3470	80.7	1750	80.0	30.2	15.9	337	15.4	ND	15.5	ND	17.0
C12-C28 Diesel Range Hydrocarbons		8460	80.7	5330	80.0	1600	15.9	4660	15.4	66.6	15.5	108	17.0
C28-C35 Oil Range Hydrocarbons		260	80.7	167	80.0	55.6	15.9	226	15.4	ND	15.5	ND	17.0
Total TPH		12200	80.7	7250	80.0	1690	15.9	5220	15.4	66.6	15.5	108	17.0

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

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: Palladium 7-1 4-Inch Poly

Work Orders : 507094,

Project ID: SRS#2013-044

Lab Batch #: 967301 **Sample:** 507094-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/02/15 11:14

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	50.1	49.8	101	70-135	

Lab Batch #: 967301 **Sample:** 507094-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/02/15 11:35

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	49.9	49.8	100	70-135	

Lab Batch #: 967301 **Sample:** 507094-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/02/15 11:56

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	57.9	49.9	116	70-135	

Lab Batch #: 967301 **Sample:** 507094-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/02/15 13:00

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.9	111	70-135	
o-Terphenyl	55.1	50.0	110	70-135	

Lab Batch #: 967301 **Sample:** 507094-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/02/15 13:21

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.8	109	70-135	
o-Terphenyl	54.0	49.9	108	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: Palladium 7-1 4-Inch Poly

Work Orders : 507094,

Project ID: SRS#2013-044

Lab Batch #: 967301 **Sample:** 507094-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/02/15 13:43

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	99.7	113	70-135	
o-Terphenyl	57.1	49.9	114	70-135	

Lab Batch #: 967656 **Sample:** 507094-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/07/15 15:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 967656 **Sample:** 507094-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/07/15 16:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 967301 **Sample:** 692051-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/02/15 04:26

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	52.8	50.0	106	70-135	

Lab Batch #: 967656 **Sample:** 692215-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/07/15 06:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	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: Palladium 7-1 4-Inch Poly

Work Orders : 507094,

Project ID: SRS#2013-044

Lab Batch #: 967301 **Sample:** 692051-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/02/15 04:50

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	48.7	50.0	97	70-135	

Lab Batch #: 967656 **Sample:** 692215-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/07/15 06:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

Lab Batch #: 967301 **Sample:** 692051-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/02/15 05:13

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

Lab Batch #: 967656 **Sample:** 692215-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/07/15 06:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 967301 **Sample:** 507062-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/02/15 06:20

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.7	121	70-135	
o-Terphenyl	63.0	49.9	126	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Orders : 507094,

Project ID: SRS#2013-044

Lab Batch #: 967656 **Sample:** 507210-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/07/15 06:55

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0337	0.0300	112	80-120	

Lab Batch #: 967301 **Sample:** 507062-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/02/15 06:43

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.8	111	70-135	
o-Terphenyl	48.2	49.9	97	70-135	

Lab Batch #: 967656 **Sample:** 507210-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/07/15 07:11

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 507094 **Project ID:** SRS#2013-044

Analyst: ARM **Date Prepared:** 05/06/2015 **Date Analyzed:** 05/07/2015

Lab Batch ID: 967656 **Sample:** 692215-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0974	97	0.100	0.0977	98	0	70-130	35	
Toluene	<0.00200	0.100	0.101	101	0.100	0.101	101	0	70-130	35	
Ethylbenzene	<0.00100	0.100	0.104	104	0.100	0.104	104	0	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.209	105	0.200	0.208	104	0	70-135	35	
o-Xylene	<0.00100	0.100	0.105	105	0.100	0.105	105	0	71-133	35	

Analyst: JUM **Date Prepared:** 05/01/2015 **Date Analyzed:** 05/01/2015

Lab Batch ID: 967292 **Sample:** 692038-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<2.00	50.0	52.9	106	50.0	53.2	106	1	90-110	20	

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

BS / BSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 507094 **Project ID:** SRS#2013-044

Analyst: ARM **Date Prepared:** 05/01/2015 **Date Analyzed:** 05/02/2015

Lab Batch ID: 967301 **Sample:** 692051-1-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	905	91	1000	915	92	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	963	96	1000	964	96	0	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: Palladium 7-1 4-Inch Poly

Work Order #: 507094

Lab Batch #: 967292 **Project ID:** SRS#2013-044

Date Analyzed: 05/01/2015 **Date Prepared:** 05/01/2015 **Analyst:** JUM

QC- Sample ID: 506833-011 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	<2.06	51.5	56.2	109	80-120	

Lab Batch #: 967292

Date Analyzed: 05/01/2015 **Date Prepared:** 05/01/2015 **Analyst:** JUM

QC- Sample ID: 506903-001 S **Batch #:** 1 **Matrix:** Solid

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	23.8	299	308	95	80-120	

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

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order # : 507094 **Project ID:** SRS#2013-044

Lab Batch ID: 967656 **QC- Sample ID:** 507210-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/07/2015 **Date Prepared:** 05/06/2015 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00115	0.115	0.105	91	0.116	0.103	89	2	70-130	35	
Toluene	<0.00231	0.115	0.102	89	0.116	0.103	89	1	70-130	35	
Ethylbenzene	<0.00115	0.115	0.107	93	0.116	0.107	92	0	71-129	35	
m_p-Xylenes	<0.00231	0.231	0.208	90	0.231	0.207	90	0	70-135	35	
o-Xylene	<0.00115	0.115	0.112	97	0.116	0.112	97	0	71-133	35	

Lab Batch ID: 967301 **QC- Sample ID:** 507062-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/02/2015 **Date Prepared:** 05/01/2015 **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	<16.7	1110	1030	93	1110	995	90	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	494	1110	1690	108	1110	1470	88	14	70-135	35	

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

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

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

Sample Duplicate Recovery

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 507094

Lab Batch #: 967296 **Project ID:** SRS#2013-044

Date Analyzed: 05/01/2015 17:00 **Date Prepared:** 05/01/2015 **Analyst:** WRU

QC- Sample ID: 507031-033 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	16.6	17.4	5	20	

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

BRL - Below Reporting Limit

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

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

Work Order #: 507094

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: 05/01/2015

Checklist reviewed by: Julian Martinez Date: 05/01/2015

CHAIN OF CUSTODY RECORD

XENCO Laboratories — Environmental Asbestos Radiochemistry

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

;roool-c

Page 1 of 1

LAB W.O#: 405701

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 J. Arguijo	Email:	bjarguijo@basinenv.com
Project ID:	Palladium 7-1 4-Inch Poly SRS #: 2013-044	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: Matt Taylor

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	GC TPH	GC Chloride	GC BTEX								Hold Sample (CALL___) on Highest TPH___ Run PAH Only if
								Pres Type**		I	I	I								
								# Cont	Lab Only:											
1	TT-1 @ 13'	4/29/2015	1149	S			1			X		HOLD								
2	TT-1 @ 20'	4/29/2015	1300	S			1			X	X									
3	SP-N	4/29/2015	1415	S			1			X										
4	SP-S	4/29/2015	1405	S			1			X										
5	SP-E	4/29/2015	1400	S			1			X										
6	SP-W	4/29/2015	1410	S			1			X										
7																				
8																				
9																				
10																				

* Container Type Codes

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

Other _____

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

** Preservative Type Codes

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

^ Matrix Type Codes

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

REMARKS

Need TPH results by 5/1.

****RUSH****

Reg. Program / Clean-up Std	STATE for Certs & Regs	QA/QC Level & Certification	EDDs	COC & Labels	Coolers Temp °C
PCLs 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 1.4 2 3

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	Matt Taylor	BasinENV	4/29/15	1700		BasinEnv.	4/29/15	1700
2		BasinEnv.	4/30/15	1345				
3	Thomas Runyan	BasinENV	4-30-15	1:45		NICCO	5/1/15	1000
4	Thomas Runyan	BASINENV	4:30:15	3:46		MS	4/30	2440

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 #

Xenco 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

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

 Revision Date: Nov 12, 2009

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

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

Work Order #: 507094

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: 05/01/2015

Checklist reviewed by: Julian Martinez Date: 05/01/2015

From: Dade, Randy, EMNRD
To: Patterson, Heather, EMNRD
Subject: FW: Re:
Date: Tuesday, May 19, 2015 9:52:45 AM

From: Pair, Randal [mailto:rpair@blm.gov]
Sent: Monday, May 18, 2015 1:47 PM
To: Ben J. Arguijo
Cc: Dade, Randy, EMNRD; Camille J. Bryant; Bobby Blackwood; sjwalters@basinenv.com
Subject: Re:

Whoops! Forgot to mention Lesser Prairie Chicken - this leak is in an area where the timing restriction applies - no work between 3:00 a.m. to 9:00 a.m. [From March 1 to June 15].
In this particular area, this timing requirement might be waived, depending upon this year's survey data. If that is a big imposition and you want to pursue a waiver, let me know.

Randal "Randy" Pair
Envir. Protection Specialist - Realty Compliance
office: 575.234.6240
cell: 575.361.0062
email: rpair@blm.gov

On Mon, May 18, 2015 at 12:28 PM, Ben J. Arguijo <bjarguijo@basinenv.com> wrote:
Thank you, sir.

Ben

Ben J. Arguijo
Project Manager
Basin Environmental
3100 Plains Hwy.
P.O. Box 301
Lovington, NM 88260
p:(575)396-2378 m:(806)549-9597
f:(575)396-1429
bjarguijo@basinenv.com

On Mon, May 18, 2015 at 11:59 AM, Pair, Randal <rpair@blm.gov> wrote:
Ben,
With your addendum, I approve this general approach. As your addendum noted, BLM will want to see lab results of final confirmation samples before BLM approves liner installation and backfilling.
Liner - if needed - should extend 4-ft laterally beyond remaining contamination (and, if feasible, turned vertically downward 2-feet at that extra 4-ft extent). And you will GPS the area of the liner for BLM records.

Randal "Randy" Pair
Envir. Protection Specialist - Realty Compliance

office: 575.234.6240
cell: 575.361.0062
email: rpair@blm.gov

On Mon, May 18, 2015 at 8:27 AM, Ben J. Arguijo <bjarguijo@basinenv.com> wrote:
Gentlemen,

I failed to note that laboratory analytical results and field-screens from the delineation activities will be provided to, and discussed with, the NMOCD and BLM prior to commencement of any of the proposed remediation activities. Apologies.

Respectfully,
Ben J. Arguijo

Ben J. Arguijo
Project Manager
Basin Environmental
3100 Plains Hwy.
P.O. Box 301
Lovington, NM 88260
p:(575)396-2378 m:(806)549-9597
f:(575)396-1429
bjarguijo@basinenv.com

On Mon, May 18, 2015 at 8:13 AM, Ben J. Arguijo <bjarguijo@basinenv.com> wrote:
Mr. Dade and Mr. Pair,

Attached please find an *Environmental Site Summary & Spill Remediation Plan* (Work Plan) for the Plains All American Pipeline, LP (Plains), release site known as Palladium 7-1 4-Inch Poly.

As has been discussed on-site and via telephone, the crude oil release occurred in March 2013 and was initiall estimated to be approximately one-half of a barrel (0.5 bbl) in size. The site fell through the cracks as a result of personnel transitions but was revisited last month. Laboratory analytical results and field-screens from samples collected during delineation activities conducted on April 16 and April 29, 2015, indicated the release was actually greater than or equal to five barrels (=5 bbls). The release was subsequently reported to both the NMOCD Artesia District Office and the BLM Carslbad Field Office. An amended C-141 is included in the attached Work Plan.

Plains and Basin Environmental request permission to commence the following delineation activities described in the Work Plan posthaste:

"The area around delineation trench TT-1 will be excavated to approximately five feet (5') bgs to allow access for heavy equipment to further advance the trench. The trench will be advanced to the extent practicable. Soil samples will be collected at one (1) to two-foot (2') vertical intervals and field-screened with a PID. A representative selection of samples will be submitted to the laboratory for confirmatory analyses of BTEX, TPH, and/or chloride concentrations using the EPA laboratory analytical methods described above. If vertical

delineation cannot be achieved via trenching, a drilling rig will be employed to advance one (1) soil boring (SB-1) in the area of trench TT-1."

Please review the Work Plan at your earliest convenience. I look forward to hearing back from you.

Thank you for your time and consideration.

Respectfully,
Ben J. Arguijo

Ben J. Arguijo
Project Manager
Basin Environmental
3100 Plains Hwy.
P.O. Box 301
Lovington, NM 88260
p:(575)396-2378 m:(806)549-9597
f:(575)396-1429
bjarguijo@basinenv.com

From: Patterson, Heather, EMNRD
To: "bjarguijo@basinenv.com"
Subject: Palladium 7-1
Date: Wednesday, May 20, 2015 7:00:00 AM

Mr. Arguijo,

Your work plan is approved.

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

If you have any questions or concerns, and for notification, please contact me.

In the future, please remit your work plans to both Mr. Bratcher and myself to ensure a timely review.

Heather Patterson
Environmental Specialist
NMOCD District II
Office (575)748-1283 ext.101
Cell (575)703-0228

From: Dade, Randy, EMNRD
Sent: Tuesday, May 19, 2015 9:54 AM
To: Patterson, Heather, EMNRD
Subject: FW:

From: Ben J. Arguijo [mailto:bjarguijo@basinenv.com]
Sent: Monday, May 18, 2015 8:14 AM
To: Dade, Randy, EMNRD; Randy Pair
Cc: Camille J. Bryant; Bobby Blackwood; sjwalters@basinenv.com
Subject:

Mr. Dade and Mr. Pair,

Attached please find an *Environmental Site Summary & Spill Remediation Plan* (Work Plan) for the Plains All American Pipeline, LP (Plains), release site known as Palladium 7-1 4-Inch Poly.

As has been discussed on-site and via telephone, the crude oil release occurred in March 2013 and was initiall estimated to be approximately one-half of a barrel (0.5 bbl) in size. The site fell through the cracks as a result of personnel transitions but was revisited last month. Laboratory analytical results and field-screens from samples collected during delineation activities conducted on April 16 and April 29, 2015, indicated the release was actually greater than or equal to five barrels (=5 bbls). The release was subsequently reported to both the

NMOCD Artesia District Office and the BLM Carslbad Field Office. An amended C-141 is included in the attached Work Plan.

Plains and Basin Environmental request permission to commence the following delineation activities described in the Work Plan posthaste:

"The area around delineation trench TT-1 will be excavated to approximately five feet (5') bgs to allow access for heavy equipment to further advance the trench. The trench will be advanced to the extent practicable. Soil samples will be collected at one (1) to two-foot (2') vertical intervals and field-screened with a PID. A representative selection of samples will be submitted to the laboratory for confirmatory analyses of BTEX, TPH, and/or chloride concentrations using the EPA laboratory analytical methods described above. If vertical delineation cannot be achieved via trenching, a drilling rig will be employed to advance one (1) soil boring (SB-1) in the area of trench TT-1."

Please review the Work Plan at your earliest convenience. I look forward to hearing back from you.

Thank you for your time and consideration.

Respectfully,
Ben J. Arguijo

Ben J. Arguijo
Project Manager
Basin Environmental
3100 Plains Hwy.
P.O. Box 301
Lovington, NM 88260
p:(575)396-2378 m:(806)549-9597
f:(575)396-1429
bjarguijo@basinenv.com

From: Ben J. Arguijo
To: Bratcher, Mike, EMNRD; Patterson, Heather, EMNRD; Randy Pair
Cc: Camille J. Bryant; Bobby Blackwood; sjwalters@basinenv.com
Subject: Palladium 7-1 4-Inch Poly (2RP-3018)
Date: Thursday, July 02, 2015 10:29:55 AM

All,

As we discussed in our conference call yesterday, the Palladium 7-1 4-Inch Poly release site (2RP-3018) has been excavated horizontally and vertically to the extent practicable, in accordance with the *Environmental Site Summary & Spill Remediation Plan* dated 5/8/2015. The north, south, and west walls of the excavation have been advanced an additional 4 feet to create a buffer zone around the maximum horizontal extent of impacted soil. The floor of the excavation will now be fitted with a 20-mil, impermeable, polyethylene liner at approximately 10 feet bgs. A cushion of sand will be installed approximately 6 inches both above and below the liner to protect it during installation and backfilling activities. The liner will extend horizontally into the buffer zone and be sloped to facilitate shedding of moisture outside the footprint of the excavation. The liner will also extend vertically approximately 3 to 4 feet along the eastern extent of the excavation, as excavation of this area was limited by the presence of an 8-inch, steel natural gas pipeline owned by Regency Energy Partners. This engineered control will serve to inhibit vertical migration of contaminants left in-situ both upward to the vegetative zone and downward to the underlying groundwater.

Since we were unable to achieve vertical delineation in trench TT-1, a section of 8-inch PVC conduit will be installed near the release point to allow advancement of a soil boring (SB-1) through the liner at a later date. The riser will be fitted with a chemically welded, 40-mil boot to preserve the integrity and impermeability of the liner. Following installation of the liner and conduit, the excavation will be backfilled with locally acquired, non-impacted material, compacted, and contoured to fit the surrounding topography.

Following backfilling, a delineation trench will be advanced to the east of the Regency pipeline to investigate the vertical and horizontal extent of impacted soil in that area. The trench will be advanced at 1- to 2-foot vertical intervals until PID field-screens and/or olfactory and visual senses suggest contaminants of concern are below the NMOCD recommended remediation action levels established for the site, or to the extent practicable.

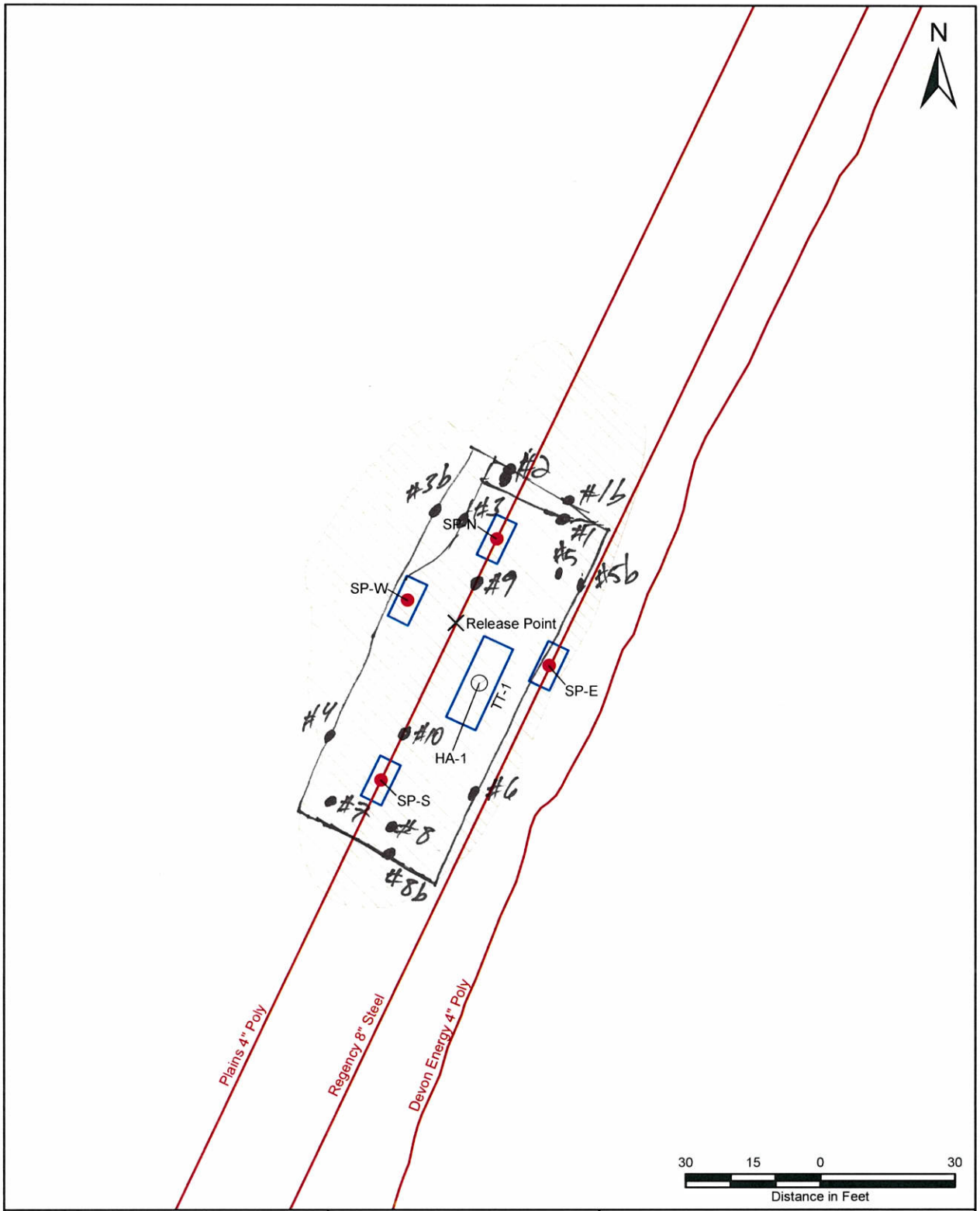
Upon completion of the proposed corrective actions, a *Remediation Summary & Risk-Based Site Closure Request* will be submitted to the NMOCD and BLM, documenting remediation activities and results of confirmation soil samples.

The disturbed area will be seeded with a BLM-approved seed mix at a time conducive to germination.

If you have any questions, comments, or concerns, please do not hesitate to contact me by telephone or email.

Respectfully,
Ben J. Arguijo

_____



Legend

- Delineation Trench
- Pipeline
- Disturbed Area
- Release Point
- Sample Location

Attachment #3
Site & Sample Location Map
Plains Pipeline, LP
Palladium 7-1 4-Inch Poly
Eddy County, New Mexico
Plains SRS #: 2013-044

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

Drawn By: BJA	Checked By: BRB
May 8, 2015	Scale: 1" = 30'

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

PLAINS ALL AMERICAN PIPELINE, LP
PALLADIUM 7-1 4-INCH POLY
EDDY COUNTY, NEW MEXICO
PLAINS SRS #: 2013-044

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030							METHOD: 8015M			TPH C_6-C_{35} (mg/Kg)	4500 Cl-B
				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)
HA-1 @ 0.5'	0.5'	4/16/2015	In-Situ	0.1220	0.3870	0.0531	0.1840	0.0486	0.2330	0.7950	740	10,600	286	**11,600**	-
HA-1 @ 1'	1'	4/16/2015	In-Situ	0.0377	0.2040	0.0512	0.1790	0.0361	0.2150	0.5080	742	5,990	213	**6,950**	-
HA-1 @ 3'	3'	4/16/2015	In-Situ	-	-	-			-	-	552	3,680	102	4,330	-
HA-1 @ 5'	5'	4/16/2015	In-Situ	-	-	-			-	-	852	4,100	105	**5,060**	-
HA-1 @ 7.5'	7.5'	4/16/2015	In-Situ	-	-	-			-	-	6,380	14,800	376	**21,600**	-
TT-1 @ 13'	13'	4/29/2015	In-Situ	<0.0540	6.12	4.54	15.7	5.56	21.3	31.9	3,470	8,460	260	**12,200**	-
TT-1 @ 20'	20'	4/29/2015	In-Situ	<0.1070	16.4	13.7	45.8	17.0	62.8	**92.9**	1,750	5,330	167	**7,250**	3.57
SP-N	5'	4/29/2015	In-Situ	-	-	-	-	-	-	-	30.2	1,600	55.6	1,690	-
SP-S	5'	4/29/2015	In-Situ	-	-	-	-	-	-	-	337	4,660	226	**5,220**	-
SP-E	5'	4/29/2015	In-Situ	-	-	-	-	-	-	-	<15.5	66.6	<15.5	66.6	-
SP-W	5'	4/29/2015	In-Situ	-	-	-	-	-	-	-	<17.0	108	<17.0	108	-
TT-1 @ 24'	24'	5/21/2015	In-Situ	0.2450	10.6	8.46	25.6	10.0	35.6	**54.9**	1,930	3,990	160	**6,080**	-
TT-1 @ 26'	26'	5/21/2015	In-Situ	1.20	18.8	10.9	32.7	12.6	45.3	**76.2**	1,920	3,900	174	**5,990**	
#1	3.5'	6/1/2015	Excavated	-	-	-	-	-	-	-	1,380	9,020	1,540	**11,900**	-
#2	3.5'	6/1/2015	Excavated	-	-	-	-	-	-	-	226	3,170	127	**3,520**	-
#3	3.5'	6/1/2015	In-Situ	-	-	-	-	-	-	-	<17.2	86.8	<17.2	86.8	-
#4	3.5'	6/1/2015	In-Situ	-	-	-	-	-	-	-	<17.8	24.0	<17.8	24.0	-
#5	3.5'	6/1/2015	Excavated	-	-	-	-	-	-	-	1,020	4,670	172	**5,860**	-
#6	3.5'	6/1/2015	In-Situ	-	-	-	-	-	-	-	<17.0	103	<17.0	103	-
#7	3.5'	6/1/2015	In-Situ	-	-	-	-	-	-	-	81.7	478	<16.7	560	-
#8	3.5'	6/1/2015	Excavated	-	-	-	-	-	-	-	75.9	1,470	45.4	1,590	-
#9	10'	6/1/2015	In-Situ	-	-	-	-	-	-	-	2,490	8,140	268	**10,900**	-
#10	10'	6/1/2015	In-Situ	-	-	-	-	-	-	-	6,310	12,700	448	**19,500**	-
#1b @ 9'	9'	6/10/2015	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<16.6	<16.6	<16.6	<16.6	-
#3b @ 9'	9'	6/10/2015	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<16.3	<16.3	<16.3	<16.3	-
#5b @ 9'	9'	6/18/2015	In-Situ	-	-	-	-	-	-	-	1,010	4,620	1,020	**6,650**	-
TT-1 @ 28'	28'	6/15/2015	In-Situ	-	-	-	-	-	-	-	7,850	12,800	542	**14,000**	-
TT-1 @ 30'	30'	6/15/2015	In-Situ	-	-	-	-	-	-	-	4,720	9,790	387	**13,100**	-
#8b @ 9'	9'	6/15/2015	In-Situ	-	-	-	-	-	-	-	<16.7	39.7	<16.7	39.7	-
NMOCD Recommended Remediation Action Level				**10**						**50**				**5,000**	**1,000**

- = Not analyzed.

From: Ben J. Arguijo <bjarguijo@basinenv.com>
Sent: Tuesday, June 28, 2016 5:52 PM
To: mike. bratcher
Cc: Camille J Bryant
Subject: Palladium 7-1 4-Inch - Site Closure Request [External]
Attachments: Palladium_SiteClosureRequest.pdf; Palladium_Final C-141.pdf

Mike,

Per our meeting this morning, attached please find the *Remediation Summary & Risk-Based Site Closure Request* for Plains' Palladium 7-1 4-Inch Poly release site. A Final C-141 is also attached.

If you have any questions/problems, please let me know.

Thanks.

Ben

Ben J. Arguijo
Sr. Project Manager
Basin Environmental
Lovington & Hobbs, NM
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bjarguijo@basinenv.com

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Lovington, New Mexico 88260
bjarguijo@basinenv.com
Office: (575) 396-2378 Fax: (575) 396-1429

Effective Solutions

REMEDIATION SUMMARY &

RISK-BASED SITE CLOSURE REQUEST

PLAINS ALL AMERICAN PIPELINE, LP
PALLADIUM 7-1 4-INCH POLY
Eddy County, New Mexico
Unit Letter "C" (NE/NW), Section 5, Township 24 South, Range 31 East
Latitude 32.25196 North, Longitude -103.80057 West
Plains SRS #: 2013-044
NMOCD Reference #: 2RP-3018

Prepared For:

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

Prepared By:

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

June 2016

NM OIL CONSERVATION
ARTESIA DISTRICT
JUN 28 2016
RECEIVED

Ben J. Arguijo
Project Manager

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FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION & BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin Environmental), on behalf of Plains All American Pipeline, LP (Plains), has prepared this *Remediation Summary & Risk-Based Site Closure Request* for the release site known as Palladium 7-1 4-Inch Poly. The legal description of the release site is Unit Letter "C" (NE/NW), Section 5, Township 24 South, Range 31 East, in Eddy County, New Mexico. The geographic coordinates of the release site are 32.251960° North latitude and -103.800570° West longitude. The property affected by the release is owned by United States Department of the Interior - Bureau of Land Management (BLM). A "Site Location Map" is provided as Figure 1.

On March 1, 2013, Plains discovered a release had occurred on its Palladium 7-1 pipeline. The release was attributed to a manufacturing defect, which caused a pinhole leak to develop in the four-inch (4"), polyethylene pipeline. The release was initially estimated to be approximately one-half of a barrel (0.5 bbl) of crude oil and, thus, was not reported to the New Mexico Oil Conservation Division (NMOCD).

On April 16, 2015, Basin Environmental commenced delineation activities at the release site. A hand-augered soil boring (HA-1) was advanced near the release point to investigate the vertical extent of impacted soil. The soil boring was advanced in six-inch (6") to one-foot (1') intervals to approximately seven and one-half feet (7.5') below ground surface (bgs). Soil samples were field-screened with a photo-ionization detector (PID), and representative confirmation soil samples (HA-1 @ 0.5', HA-1 @ 1', HA-1 @ 3', HA-1 @ 5', HA-1 @ 7.5') were submitted to Xenco Laboratories in Odessa, Texas, for analysis TPH concentrations using Environmental Protection Agency (EPA) Method SW 846-8015M. Soil samples HA-1 @ 0.5' and HA-1 @ 1' were also analyzed for BTEX concentrations using EPA Method SW 846-8021b.

Laboratory analytical results indicated benzene concentrations ranged from 0.0377 mg/kg in soil sample HA-1 @ 1' to 0.1220 mg/kg in soil sample HA-1 @ 0.5'. Total BTEX concentrations ranged from 0.5080 mg/kg in soil sample HA-1 @ 1' to 0.7950 mg/kg in soil sample HA-1 @ 0.5'. TPH concentrations ranged from 4,330 mg/kg in soil sample HA-1 @ 3' to 21,600 mg/kg in soil sample HA-1 @ 7.5'.

Review of laboratory analytical documentation indicated additional vertical delineation of the release was required.

On April 29, 2015, a series of five (5) delineation trenches (TT-1, N, S, E, and W) were advanced at the site to further investigate the horizontal and vertical extent of impacted soil. Trench TT-1 was advanced in the area represented by hand-augered soil boring HA-1. Trenches N and S were advanced along the Palladium 7-1 poly pipeline, at the northern and southern boundaries, respectively, of the visibly impacted area. Trench E was advanced along an eight-inch (8"), steel, natural gas pipeline at the eastern boundary of the visibly impacted area. Trench W was advanced along the western boundary of the visibly impacted area.

The delineation trenches were advanced in one-foot (1') to three-foot (3') intervals to total depths ranging from approximately five feet (5') bgs in trenches N, S, E, and W to approximately

twenty feet (20') bgs in trench TT-1. Soil samples were field-screened with a PID, and six (6) confirmation soil samples (TT-1 @ 13', TT-1 @ 20', SP-N, SP-S, SP-E, SP-W) were submitted to the laboratory for analysis of TPH and/or BTEX concentrations. Soil sample TT-1 @ 20' was also analyzed for chloride using EPA Method 300.1.

Laboratory analytical results indicated benzene concentrations were less than the laboratory method detection limit (MDL) in soil samples TT-1 @ 13' and TT-1 @ 20'. Total BTEX concentrations ranged from 31.9 mg/kg in soil sample TT-1 @ 13' to 92.9 mg/kg in soil sample TT-1 @ 20'. TPH concentrations ranged from 66.6 mg/kg in soil sample SP-E to 12,200 mg/kg in soil sample TT-1 @ 13'. The chloride concentration in soil sample TT-1 @ 20' was 3.57 mg/kg.

Further vertical advancement of delineation trench TT-1 was hampered by the presence of active pipelines on either side of the trench, which restricted the horizontal range of motion of the excavator's boom.

Review of laboratory analytical documentation indicated delineation was not achieved in trenches TT-1 and S, and additional vertical delineation was required in the areas represented by these trenches. Horizontal and vertical delineation to the north, east, and west of the release point was achieved.

General photographs of the release site and remediation activities are provided as Appendix A. Locations of the hand-augered soil boring and delineation trenches are depicted in Figure 2, "Site & Sample Location Map". Laboratory analytical results are summarized in Table 1, "Concentrations of Benzene, BTEX, TPH & Chloride in Soil". Laboratory analytical reports are provided in Appendix C.

Since the April 2015 delineation activities indicated the volume of the release was greater than or equal to five barrels (≥5 bbls), the release was subsequently reported to the NMOCD's Artesia District Office and the BLM's Carlsbad Field Office. The "Release Notification and Corrective Action" (Form C-141), dated May 6, 2015, indicated the release impacted an area of pastureland measuring approximately one hundred feet (100') in length and sixty feet (60') in width. The Form C-141 is provided as Appendix D.

On May 4, 2015, representatives of the BLM, Plains, and Basin Environmental met on-site to visually inspect the release and surrounding area, review the locations of the delineation trenches, and to determine a path forward to an NMOCD- and BLM-approved closure. During the site visit, the BLM representative determined that an archaeological survey of the release site would not be required due to its location along the rights-of-way (ROW) of three (3) pipelines (Plains, Regency Energy Partners, and Devon Energy) and its proximity to a nearby tank battery (i.e., approximately 290 feet west of the release), which would have been surveyed during construction and/or expansion. An archaeological survey would be required in the event that remediation activities encroached upon undisturbed soil to the west of the pipeline ROW.

Since remediation activities did not encroach upon undisturbed soil to the west of the pipeline ROW, no archaeological survey of the site was required.

On May 18, 2015, an *Environmental Site Summary & Spill Remediation Plan* (Work Plan) was submitted to the BLM and NMOCD outlining a strategy to advance the site to an approved, risk-based closure. The Work Plan was approved upon submittal by a representative of the BLM, with the additional requirements that a plastic liner, if required, would 1.) be installed such that it extended approximately four feet (4') laterally beyond the maximum horizontal extent of impacted soil, and 2.) be sloped approximately two feet (2') downward around the perimeter to facilitate runoff of moisture. In addition, the daily work schedule would be modified to prevent interruption of the mating cycle of the Lesser Prairie Chicken (i.e., March 1 to June 15, 3:00 AM to 9:00 AM).

The Work Plan was approved by an NMOCD representative on May 20, 2015, with no additional requirements.

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 information was unavailable for Section 5, Township 24 South, Range 31 East. A depth-to-groundwater reference map utilized by the NMOCD indicates groundwater should be encountered approximately two-hundred eighty-five (285) to two-hundred ninety feet (290') bgs. Based on the NMOCD ranking system, zero (0) points were assigned to the site as a result of this criterion.

A search of the NMWRRS database indicated there are no water wells within one thousand feet (1,000') of the release. Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

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

NMOCD guidelines indicate the Palladium 7-1 4-Inch Poly release site has an initial ranking score of zero (0) points. The soil remediation levels for a site with a ranking score of zero (0) points are as follows:

- Benzene – 10 mg/kg (ppm)
- Benzene, ethylbenzene, toluene, and xylenes (BTEX) – 50 mg/kg (ppm)
- Total petroleum hydrocarbons (TPH) – 5,000 mg/kg (ppm)

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

3.0 SUMMARY OF SOIL REMEDIATION ACTIVITIES

On May 21, 2015, the area around delineation trench TT-1 was excavated to approximately five feet (5') bgs to allow access for heavy equipment to further advance the trench. The trench was re-entered and advanced to approximately twenty-six feet (26') bgs (the extent practicable). Soil

samples were collected at one (1) to two-foot (2') vertical intervals and field-screened with a PID. Two (2) confirmation soil samples (TT-1 @ 24' and TT-1 @ 26') were submitted to the laboratory for analysis of BTEX and TPH concentrations using the EPA laboratory analytical methods described above.

Laboratory analytical results indicated benzene concentrations ranged from 0.2450 mg/kg in soil sample TT-1 @ 24' to 1.20 mg/kg in soil sample TT-1 @ 26'. Total BTEX concentrations ranged from 54.9 mg/kg in soil sample TT-1 @ 24' to 76.2 mg/kg in soil sample TT-1 @ 26'. TPH concentrations ranged from 5,990 mg/kg in soil sample TT-1 @ 26' to 6,080 mg/kg in soil sample TT-1 @ 24'.

Review of laboratory analytical documentation indicated additional vertical delineation was required in the area represented by delineation trench TT-1.

On May 29, 2015, excavation of impacted soil commenced at the site. A PID and olfactory/visual senses were used to field-screen the horizontal extent of impacted soil and to guide the excavation. The eastern extent of the excavation was limited by the presence of an eight-inch (8"), steel, natural gas pipeline adjacent to the release site. To prevent sloughing from undermining the structural integrity of the natural gas pipeline and the Palladium 7-1 poly pipeline, the vertical extent of the excavation was limited to a maximum depth of ten feet (10') bgs.

Excavated soil was stockpiled on six (6) mil, polyethylene plastic, pending final disposition. From May 29 through June 19, 2015, approximately one thousand, two hundred seventy-two cubic yards (1,272 yd^3) of impacted soil was excavated and transported to Lazy Ace Landfarm, LLC (NMOCD Permit #WM-01-041), for disposal.

On June 1, 2015, ten (10) soil samples (#1, #2, #3, #4, #5, #6, #7, #8, #9, and #10) were collected from the floor and sidewalls of the excavation and submitted to the laboratory for analysis of TPH concentrations. Laboratory analytical results indicated TPH concentrations ranged from 24.0 mg/kg in soil sample #4 to 19,500 mg/kg in soil sample #10.

On June 10, 2015, the area represented by soil sample #1 was advanced horizontally to the north and vertically to approximately ten feet (10') bgs. Due to the appearance of staining in the excavation sidewall attributed to leaching, the area represented by soil sample #3 was advanced horizontally to the west and vertically to approximately ten feet (10') bgs. Two (2) soil samples (#1b @ 9' and #3b @ 9') were collected from the sidewall of the excavation and submitted to the laboratory for analysis of TPH and BTEX concentrations. Laboratory analytical results indicated TPH and BTEX constituent concentrations were less than the appropriate laboratory MDL.

On June 15, 2015, delineation trench TT-1 was re-entered and advanced to approximately thirty feet (30') bgs (the extent practicable). Soil samples were collected at one (1) to two-foot (2') vertical intervals and field-screened with a PID. Two (2) confirmation soil samples (TT-1 @ 8' and TT-1 @ 30') were submitted to the laboratory for analysis of TPH concentrations. Laboratory analytical results indicated TPH concentrations ranged from 13,100 mg/kg in soil sample TT-1 @ 30' to 14,000 mg/kg in soil sample TT-1 @ 28'.

Review of laboratory analytical documentation indicated additional vertical delineation was required in the area represented by delineation trench TT-1.

To accommodate an expanded access ramp, the area represented by soil sample #8 was advanced horizontally to the south and vertically to approximately ten feet (10') bgs. A soil sample (#8b @ 9') was collected from the sidewall of the excavation and submitted to the laboratory for analysis of TPH concentrations. Laboratory analytical results indicated the TPH concentration was 39.7 mg/kg.

On June 18, 2015, the area represented by soil sample #5 was advanced to the east. Due to safety and environmental concerns, a three-foot (3') safety buffer zone was maintained between the excavation and the adjacent eight-inch (8") natural gas pipeline. A soil sample (#5b @ 9') was collected from the sidewall of the excavation and submitted to the laboratory for analysis of TPH concentrations. Laboratory analytical results indicated the TPH concentration was 6,650 mg/kg.

Pursuant to BLM request, the north, south, and west walls of the excavation were advanced an additional four feet (4') to create a buffer zone around the maximum horizontal extent of impacted soil.

On July 1, 2015, representatives of the NMOCD, BLM, Plains, and Basin Environmental conducted a conference call to discuss remediation activities performed at the site to-date and to determine a path forward to an approved closure. Permission was requested to 1.) install a twenty (20) mil, impermeable, polyethylene liner on the floor of the excavation and the buffer zone at approximately ten feet (10') feet bgs, 2.) install a section of eight-inch (8") PVC conduit near the release point to allow advancement of a soil boring (SB-1) through the liner at a later date, and 3.) backfill the excavation.

The requests were approved by the BLM and NMOCD, with the additional requirements that 1.) the liner would be installed such that it extended vertically approximately three (3) to four feet (4') along the eastern wall of the excavation, since excavation in that area was limited by the presence of the eight-inch (8") natural gas pipeline, and 2.) a delineation trench would be advanced to the east of the pipeline to investigate the vertical and horizontal extent of impacted soil in that area. The delineation trench would be advanced until PID field-screens and/or olfactory and visual senses suggested contaminants of concern were below the NMOCD recommended remediation action levels (RRALs) established for the site, or to the extent practicable. In addition, one (1) soil sample would be collected from a depth matching the maximum vertical extent of the staining present on the eastern wall of the excavation (or approximately 6' bgs).

On July 7, 2015, a twenty (20) mil, impermeable, polyethylene liner was installed on the floor excavation at approximately ten feet (10') bgs. A cushion of sand was installed both above and below the liner to protect the liner from damage during installation and backfilling activities. Pursuant to BLM request, the liner was extended horizontally into the four-foot (4') buffer zone around the excavation and sloped to facilitate shedding of moisture outside the footprint of the excavation and the maximum horizontal extent of in-situ impacted soil. The liner was also extended vertically approximately four feet (4') along the eastern extent of the excavation. This

engineered control will serve to inhibit vertical migration of contaminants left in-situ both upward to the vegetative zone and downward to the underlying groundwater.

On July 9, 2015, a section of eight-inch (8") PVC conduit was installed near the release point, in an area representative of delineation trench TT-1, to facilitate advancement of a soil boring through the liner at a later date. The riser was fitted with a chemically welded, forty (40) mil boot to preserve the integrity and impermeability of the liner.

Based on laboratory analytical results, and with NMOCD approval, from July 7 through July 13, 2015, the excavation was backfilled with non-impacted material, compacted, and contoured to fit the surrounding topography. Prior to backfilling, the final dimensions of the excavation were approximately sixty-two feet (62') in length, approximately forty-five feet (45') in width, and approximately ten feet (10') in depth.

On July 13, 2015, a delineation trench (TT-2) was advanced to investigate the horizontal and vertical extent of impacted soil to the east of the eight-inch (8") natural gas pipeline adjacent to the excavation. The trench was advanced in two-foot (2') intervals to a total depth of approximately fourteen feet (14') bgs. The soil samples were field-screened with a PID, and five (5) confirmation samples (TT-2 @ 2', TT-2 @ 6', TT-2 @ 10', TT-2 @ 12', and TT-2 @ 14') were submitted to the laboratory for analysis of TPH concentrations. Laboratory analytical results indicated TPH concentrations were less than the laboratory MDL in all submitted soil samples.

Review of laboratory analytical documentation indicated horizontal and vertical delineation to the east of the excavation was achieved.

On October 28, 2015, one (1) soil boring (SB-1) was advanced through the eight-inch (8") PVC conduit that had been set on the floor of the excavation prior to backfilling. The soil boring was advanced to a total depth of one hundred forty feet (140') bgs. Soil samples were collected at five-foot (5') drilling intervals and field-screened with a PID and olfactory senses. Six (6) confirmation samples (SB-1 @ 30', SB-1 @ 50', SB-1 @ 80', SB-1 @ 105', SB-1 @ 135', and SB-1 @ 140') were submitted to the laboratory for analysis of BTEX and TPH concentrations. Laboratory analytical results indicated benzene concentrations ranged from less than the laboratory MDL in soil samples SB-1 @ 30', SB-1 @ 105', SB-1 @ 135', and SB-1 @ 140' to 0.0107 mg/kg in soil sample SB-1 @ 50'. Total BTEX concentrations ranged from less than the laboratory MDL in soil samples SB-1 @ 105', SB-1 @ 135', and SB-1 @ 140' to 28.5 mg/kg in soil sample SB-1 @ 30'. TPH concentrations ranged from 151 mg/kg in soil sample SB-1 @ 140' to 2,900 mg/kg in soil sample SB-1 @ 30'. A soil boring log is provided as Appendix C.

On May 24, 2016, the remediation site was seeded with a BLM-approved seed mixture. Post-seeding photographs of the site are included in Appendix B.

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

The Palladium 7-1 4-Inch Poly release site was excavated to the extent practicable. Soil samples collected from the delineation trenches, soil boring, and floor and sidewalls of the excavation were analyzed by an NMOCD-approved laboratory, and concentrations of benzene and chloride were below the RRALs established for the site.

A twenty (20) mil, impermeable, polyethylene liner was installed on the floor of the excavation prior to backfilling. The liner was extended horizontally into a four-foot (4’) buffer zone around the excavation and sloped to facilitate shedding of moisture outside the footprint of the excavation and the maximum horizontal extent of in-situ impacted soil. The liner was also extended vertically approximately four feet (4’) along the eastern extent of the excavation. This engineered control will serve to inhibit vertical migration of contaminants left in-situ both upward to the vegetative zone and downward to the underlying groundwater.

Soil along the eastern extent of the excavation exhibiting TPH concentrations above the RRAL established for the site will be remediated upon decommission and/or abandonment of the currently active natural gas pipeline.

Basin Environmental recommends Plains provide the NMOCD's Artesia District Office and the BLM's Carlsbad Field Office a copy of this *Remediation Summary & Risk-Based Site Closure Request* and request the NMOCD grant site closure to the Palladium 7-1 4-Inch Poly 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 All American Pipeline, LP. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Service Technologies, LLC, and/or Plains Pipeline, LP.

7.0 DISTRIBUTION:

Copy 1: Mike Bratcher
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division (District 2)
1301 E. Grand Avenue
Artesia, NM 88210

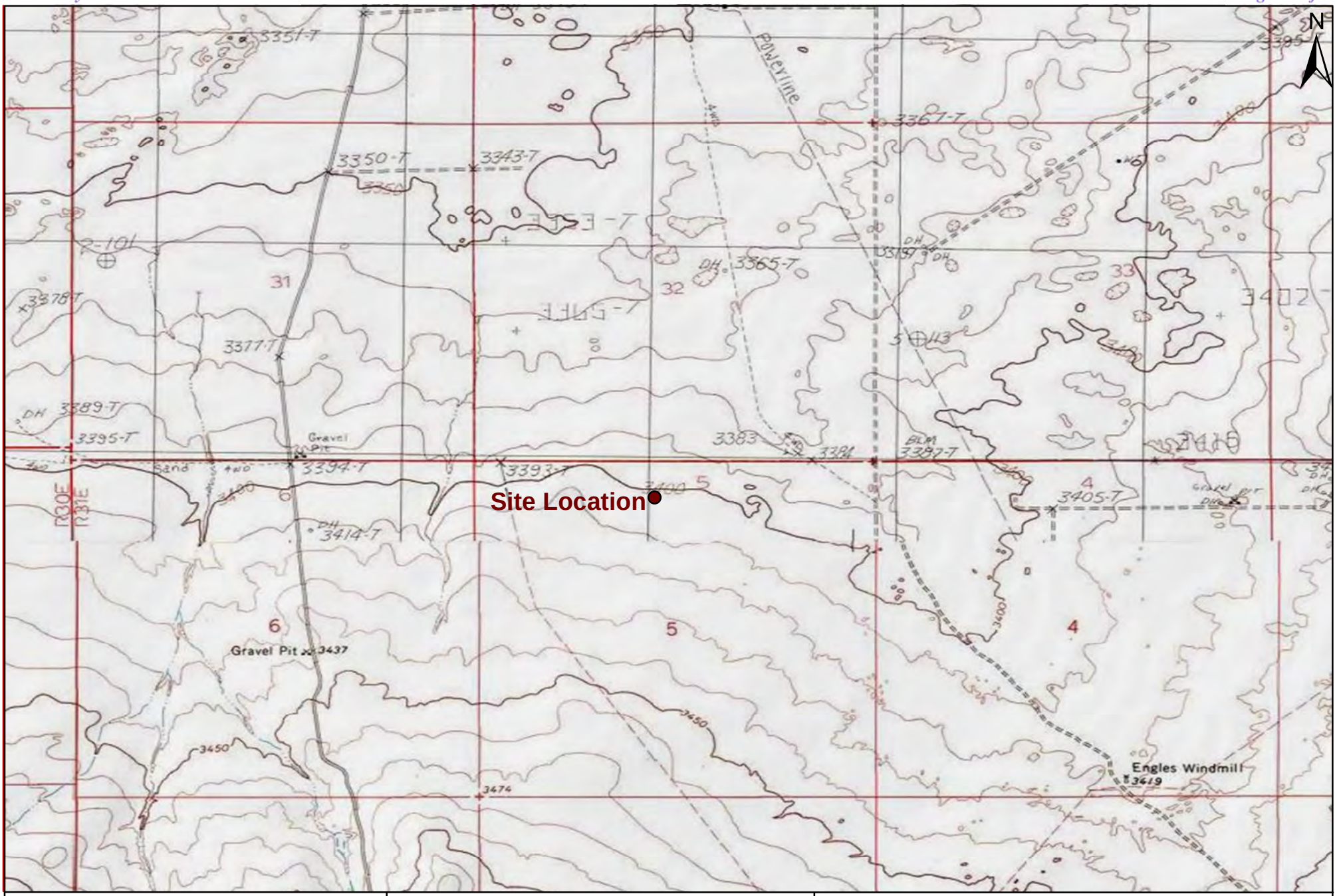
Copy 2: Randal Pair
Bureau of Land Management
602 E. Greene Street
Carlsbad, NM 88220

Copy 3: Jeff Dann
Plains All American Pipeline, LP
333 Clay Street, Suite 1600
Houston, Texas 77002
jpdann@paalp.com

Copy 4: Camille Bryant
Plains Marketing, LP
2530 State Highway 214
Denver City, Texas 79323
cjbryant@paalp.com

Copy 5: Basin Environmental Service Technologies, LLC
P.O. Box 301
Lovington, New Mexico 88260

Figures



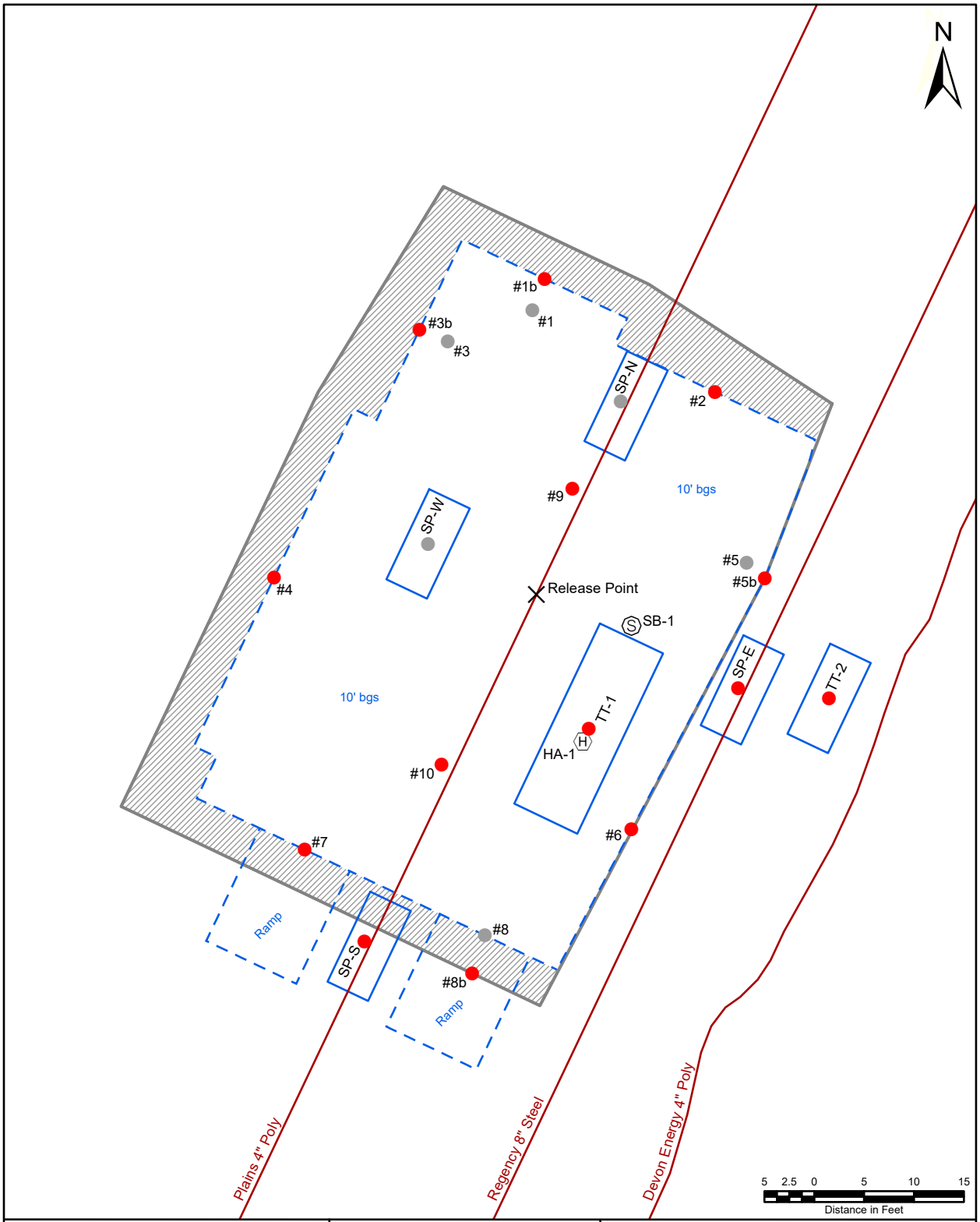
1,000500 0 1,000 2,000

Distance in Feet

Figure 1
Site Location Map
Plains Pipeline, LP
Palladium 7-1 4-Inch Poly
Eddy County, New Mexico
Plains SRS #: 2013-044
NMOCD Reference #: 2RP-3018

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

Drawn By: BJA	Checked By: HST
June 13, 2016	Scale: 1" = 2,000'



Legend

- Excavation Extent
- Delineation Trench
- Pipeline
- Liner Extent
- Buffer Zone
- Release Point
- Sample Location
- Excavated Sample
- Soil Boring
- Hand-Auger

Figure 2
Site & Sample Location Map
Plains Pipeline, LP
Palladium 7-1 4-Inch Poly
Eddy County, New Mexico
Plains SRS #: 2013-044
NMOCD Reference #: 2RP-3018

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

Drawn By: BJA	Checked By: HST
June 14, 2016	Scale: 1" = 15'

Tables

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

PLAINS ALL AMERICAN PIPELINE, LP
PALLADIUM 7-1 4-INCH POLY
EDDY COUNTY, NEW MEXICO
PLAINS SRS #: 2013-044
NMOCD REFERENCE #: 2RP-3018

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030							METHOD: 8015M			TPH C_6-C_{35} (mg/Kg)	4500 Cl-B
				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)
HA-1 @ 0.5'	0.5'	4/16/2015	In-Situ	0.1220	0.3870	0.0531	0.1840	0.0486	0.2330	0.7950	740	10,600	286	**11,600**	-
HA-1 @ 1'	1'	4/16/2015	In-Situ	0.0377	0.2040	0.0512	0.1790	0.0361	0.2150	0.5080	742	5,990	213	**6,950**	-
HA-1 @ 3'	3'	4/16/2015	In-Situ	-	-	-			-	-	552	3,680	102	4,330	-
HA-1 @ 5'	5'	4/16/2015	In-Situ	-	-	-			-	-	852	4,100	105	**5,060**	-
HA-1 @ 7.5'	7.5'	4/16/2015	In-Situ	-	-	-			-	-	6,380	14,800	376	**21,600**	-
TT-1 @ 13'	13'	4/29/2015	In-Situ	<0.0540	6.12	4.54	15.7	5.56	21.3	31.9	3,470	8,460	260	**12,200**	-
TT-1 @ 20'	20'	4/29/2015	In-Situ	<0.1070	16.4	13.7	45.8	17.0	62.8	**92.9**	1,750	5,330	167	**7,250**	3.57
SP-N	5'	4/29/2015	In-Situ	-	-	-	-	-	-	-	30.2	1,600	55.6	1,690	-
SP-S	5'	4/29/2015	In-Situ	-	-	-	-	-	-	-	337	4,660	226	**5,220**	-
SP-E	5'	4/29/2015	In-Situ	-	-	-	-	-	-	-	<15.5	66.6	<15.5	66.6	-
SP-W	5'	4/29/2015	In-Situ	-	-	-	-	-	-	-	<17.0	108	<17.0	108	-
TT-1 @ 24'	24'	5/21/2015	In-Situ	0.2450	10.6	8.46	25.6	10.0	35.6	**54.9**	1,930	3,990	160	**6,080**	-
TT-1 @ 26'	26'	5/21/2015	In-Situ	1.20	18.8	10.9	32.7	12.6	45.3	**76.2**	1,920	3,900	174	**5,990**	
#1	3.5'	6/1/2015	Excavated	-	-	-	-	-	-	-	1,380	9,020	1,540	**11,900**	-
#2	3.5'	6/1/2015	Excavated	-	-	-	-	-	-	-	226	3,170	127	3,520	-
#3	3.5'	6/1/2015	In-Situ	-	-	-	-	-	-	-	<17.2	86.8	<17.2	86.8	-
#4	3.5'	6/1/2015	In-Situ	-	-	-	-	-	-	-	<17.8	24.0	<17.8	24.0	-
#5	3.5'	6/1/2015	Excavated	-	-	-	-	-	-	-	1,020	4,670	172	**5,860**	-
#6	3.5'	6/1/2015	In-Situ	-	-	-	-	-	-	-	<17.0	103	<17.0	103	-
#7	3.5'	6/1/2015	In-Situ	-	-	-	-	-	-	-	81.7	478	<16.7	560	-
#8	3.5'	6/1/2015	Excavated	-	-	-	-	-	-	-	75.9	1,470	45.4	1,590	-
#9	10'	6/1/2015	In-Situ	-	-	-	-	-	-	-	2,490	8,140	268	**10,900**	-
#10	10'	6/1/2015	In-Situ	-	-	-	-	-	-	-	6,310	12,700	448	**19,500**	-
#1b @ 9'	9'	6/10/2015	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<16.6	<16.6	<16.6	<16.6	-
#3b @ 9'	9'	6/10/2015	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<16.3	<16.3	<16.3	<16.3	-
TT-1 @ 28'	28'	6/15/2015	In-Situ	-	-	-	-	-	-	-	7,850	12,800	542	**14,000**	-
TT-1 @ 30'	30'	6/15/2015	In-Situ	-	-	-	-	-	-	-	4,720	9,790	387	**13,100**	-
#8b @ 9'	9'	6/15/2015	In-Situ	-	-	-	-	-	-	-	<16.7	39.7	<16.7	39.7	-
#5b @ 9'	9'	6/18/2015	In-Situ	-	-	-	-	-	-	-	1,010	4,620	1,020	**6,650**	-

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

PLAINS ALL AMERICAN PIPELINE, LP
PALLADIUM 7-1 4-INCH POLY
EDDY COUNTY, NEW MEXICO
PLAINS SRS #: 2013-044
NMOCD REFERENCE #: 2RP-3018

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030							METHOD: 8015M			TPH C_6-C_{35} (mg/Kg)	4500 Cl-B
				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-2 @ 2'	2'	7/13/2015	In-Situ								<15.7	<15.7	<15.7	<15.7	-
TT-2 @ 6'	6'	7/13/2015	In-Situ								<17.1	<17.1	<17.1	<17.1	-
TT-2 @ 10'	10'	7/13/2015	In-Situ								<17.2	<17.2	<17.2	<17.2	-
TT-2 @ 12'	12'	7/13/2015	In-Situ								<16.5	<16.5	<16.5	<16.5	-
TT-2 @ 14'	14'	7/13/2015	In-Situ								<17.0	<17.0	<17.0	<17.0	-
SB-1 @ 30'	30'	10/28/2015	In-Situ	<0.0253	3.8	3.64	15.5	5.51	21	28.5	412	2,270.0	220	2,900	-
SB-1 @ 50'	50'	10/28/2015	In-Situ	0.0107	0.019	0.00744	0.102	0.031	0.133	0.17	19.0	321.0	42.3	382	-
SB-1 @ 80'	80'	10/28/2015	In-Situ	0.00126	0.00378	0.0153	0.092	0.0496	0.142	0.162	24.2	283.0	35.7	343	-
SB-1 @ 105'	105'	10/28/2015	In-Situ	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<14.9	178.0	25.1	203	-
SB-1 @ 135'	135'	10/28/2015	In-Situ	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	17.3	277.0	34.9	329	-
SB-1 @ 140'	140'	10/28/2015	In-Situ	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<15.0	133.0	17.5	151	-
NMOCD Recommended Remediation Action Level				**10**						**50**				**5,000**	**1,000**

- = Not analyzed.

Appendices

Appendix A

Photographs

Palladium 7-1 4-Inch Poly – Point of Release (Looking Northeast)

Palladium 7-1 4-Inch Poly – Excavation (Looking North)

Palladium 7-1 4-Inch Poly - Excavation (Looking East-Northeast)

Palladium 7-1 4-Inch Poly - Excavation (Looking Southeast)

Palladium 7-1 4-Inch Poly – Liner Installation (Looking South-Southeast)

Palladium 7-1 4-Inch Poly – Liner Installation (Looking Southwest)

Palladium 7-1 4-Inch Poly – Backfilling (Looking Northeast)

Palladium 7-1 4-Inch Poly - Backfilling (Looking West

Palladium 7-1 4-Inch Poly – Backfilled Excavation

Palladium 7-1 4-Inch Poly – Advancement of Soil Boring SB-1

Palladium 7-1 4-Inch Poly – Post-Seeding (Looking North)

Palladium 7-1 4-Inch Poly –Post-Seeding (Looking Northeast)

Appendix B

Soil Boring Log

Company: Plains Pipeline, LP
Project Name: Palladium 7-1 4-Inch Poly
Project ID: SRS #2013-044
Location: Eddy Co., NM
Legal Description: U/L "C" (NENW), Sec. 5, T24S, R31E
Logger: Robbie Runnels
Drafted By: Ben J. Arguijo
Draft Date: January 12, 2016

Well/Borehole ID: SB-1
Drilling Method: Air Rotary
Driller: Straub Corporation
Latitude: 32.251944
Longitude: -103.800556
Drilling Date: 10/28/2015
Depth of Exploratory Boring (ft): 140
Depth to Groundwater (ft): N/A

Drilling Depth (ft)	Lithology	Lithology Description	Field Measurements/Observations: PID Reading	Chloride	Petroleum Odor	Petroleum Staining	Lab Results: TPH	Benzene	BTEX	Well Construction
0			-	-	-	-	-	-	-	
5		PVC Drilling Conduit	-	-	-	-	-	-	-	
10		Brown fine sand w/ clay	-	-	Heavy	Moderate	-	-	-	
15		Red very fine sand - Cement sandstone	-	-	Heavy	None	-	-	-	
20			2,198	-	Heavy	None	-	-	-	
25		Red silty clay - Silty Sand	2,087	-	Heavy	None	2,900	ND	28.5	
30			291	-	Moderate	None	-	-	-	
35			332	-	Moderate	None	-	-	-	
40		Red very fine sand - Cement sandstone	295	-	Moderate	None	-	-	-	
45			168	-	Moderate	None	382	0.011	0.17	
50			108	-	Moderate	None	-	-	-	
55			91.8	-	Slight	None	-	-	-	
60		Dark red silty clay - Silty sand	35.2	-	Slight	None	-	-	-	
65			143	-	Moderate	None	-	-	-	
70			104	-	Moderate	None	-	-	-	
75		Red very fine sand - Cement sandstone	435	-	Moderate	None	343	0.001	0.16	
80			70.8	-	Slight	None	-	-	-	
85			28.7	-	Slight	None	-	-	-	
90			87.4	-	Slight	None	-	-	-	
95		Red very fine sand - Cement sandstone w/ clay	152	-	Moderate	None	-	-	-	
100			1,144	-	Heavy	None	203	ND	ND	
105			51.8	-	Slight	None	-	-	-	
110			40.1	-	Slight	None	-	-	-	
115		Dark red silty clay	129	-	Moderate	None	-	-	-	
120			144	-	Moderate	None	-	-	-	
125		Red silty clay	190	-	Moderate	None	-	-	-	
130			44.8	-	None	None	329	ND	ND	
135			41.2	-	None	None	151	ND	ND	
140										

Bentonite Plug
Gravel Pack
Grout Seal
Sand Pack
Slough
Monument
PVC Casing
Screen
End Cap

Basin Environmental Service Technologies, LLC
P.O. Box 301, Lovington, NM 88260
Lovington: (575)396-2378 Hobbs: (575)393-2967

Notes:
1. All samples collected from cuttings.
2. Lines between material types shown in the soil profile log represent approximate boundaries. Actual transitions may be gradual.
3. Field-test & laboratory analytical results reported in mg/kg (ppm).

Appendix C

Laboratory Analytical Reports

Analytical Report 506301 & 506397

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Palladium 7-1 4-Inch Poly

SRS#2013-044

24-APR-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-18), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

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

24-APR-15

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

Reference: XENCO Report No(s): **506301, 506397**
Palladium 7-1 4-Inch Poly
Project Address:

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) 506301. 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. 506301 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 506301, 506397

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
HA-1 @0.5'	S	04-16-15 09:30	- .5 ft	506301-001
HA-1 @ 1'	S	04-16-15 09:45	- 1 ft	506301-002
HA-1 @ 3'	S	04-16-15 10:15	- 3 ft	506397-001
HA-1 @ 5'	S	04-16-15 10:45	- 5 ft	506397-002
HA-1 @ 7' 6"	S	04-16-15 11:35	7 - 6" ft	506397-003

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Palladium 7-1 4-Inch Poly

Project ID:	*SRS#2013-044*	Report Date:	*24-APR-15*
Work Order Number(s):	*506301,506397*	Date Received:	*04/18/2015*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 506301

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Palladium 7-1 4-Inch Poly

Project Id: SRS#2013-044
Contact: Ben Arguijo
Project Location:

Date Received in Lab: Sat Apr-18-15 01:45 pm
Report Date: 24-APR-15
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	506301-001		506301-002					
	Field Id:	HA-1 @0.5'		HA-1 @ 1'					
	Depth:	.5 ft		1 ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Apr-16-15 09:30		Apr-16-15 09:45					
BTEX by EPA 8021	***Extracted:***	Apr-20-15 16:00		Apr-20-15 16:00					
	Analyzed:	Apr-21-15 06:23		Apr-21-15 06:06					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		0.122	0.00100	0.0377	0.00101				
Toluene		0.387	0.00201	0.204	0.00202				
Ethylbenzene		0.0531	0.00100	0.0512	0.00101				
m_p-Xylenes		0.184	0.00201	0.179	0.00202				
o-Xylene		0.0486	0.00100	0.0361	0.00101				
Xylenes, Total		0.233	0.00100	0.215	0.00101				
Total BTEX		0.795	0.00100	0.508	0.00101				
Percent Moisture	***Extracted:***								
	Analyzed:	Apr-20-15 17:00		Apr-20-15 17:00					
	Units/RL:	%	RL	%	RL				
Percent Moisture		1.00	1.00	1.61	1.00				
TPH by SW8015 Mod	***Extracted:***	Apr-20-15 15:00		Apr-20-15 15:00					
	Analyzed:	Apr-21-15 08:25		Apr-21-15 09:08					
	Units/RL:	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		740	75.8	742	76.1				
C12-C28 Diesel Range Hydrocarbons		10600	75.8	5990	76.1				
C28-C35 Oil Range Hydrocarbons		286	75.8	213	76.1				
Total TPH		11600	75.8	6950	76.1				

Certificate of Analysis Summary 506397

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Palladium 7-1 4-Inch Poly

Project Id: SRS#2013-044
Contact: Ben Arguijo
Project Location:

Date Received in Lab: Tue Apr-21-15 09:45 am
Report Date: 22-APR-15
Project Manager: Kelsey Brooks

Analysis Requested											
	Lab Id:	506397-001		506397-002		506397-003					
	Field Id:	HA-1 @ 3'		HA-1 @ 5'		HA-1 @ 7' 6"					
	Depth:	3 ft		5 ft		7-6" ft					
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	Apr-16-15 10:15		Apr-16-15 10:45		Apr-16-15 11:35					
Percent Moisture	Extracted:										
	Analyzed:	Apr-21-15 17:00		Apr-21-15 17:00		Apr-21-15 17:00					
	Units/RL:	%	RL	%	RL	%	RL				
Percent Moisture		4.18	1.00	10.5	1.00	14.1	1.00				
TPH by SW8015 Mod	Extracted:	Apr-21-15 13:00		Apr-21-15 13:00		Apr-21-15 13:00					
	Analyzed:	Apr-21-15 17:22		Apr-21-15 17:44		Apr-21-15 18:06					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		552	15.6	852	16.7	6380	86.9				
C12-C28 Diesel Range Hydrocarbons		3680	15.6	4100	16.7	14800	86.9				
C28-C35 Oil Range Hydrocarbons		102	15.6	105	16.7	376	86.9				
Total TPH		4330	15.6	5060	16.7	21600	86.9				

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 **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: Palladium 7-1 4-Inch Poly

Work Orders : 506301,506397 **Project ID:** SRS#2013-044

Lab Batch #: 966421 **Sample:** 506301-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/21/15 06:06

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 966421 **Sample:** 506301-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/21/15 06:23

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 966445 **Sample:** 506301-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/21/15 08:25

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	63.9	50.0	128	70-135	

Lab Batch #: 966445 **Sample:** 506301-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/21/15 09:08

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.8	101	70-135	
o-Terphenyl	61.7	49.9	124	70-135	

Lab Batch #: 966445 **Sample:** 691502-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/20/15 22:58

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.7	100	97	70-135	
o-Terphenyl	48.3	50.0	97	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.

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Orders : 506301,506397 **Project ID:** SRS#2013-044

Lab Batch #: 966421 **Sample:** 691490-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/21/15 00:39

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 966445 **Sample:** 691502-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/20/15 23:21

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	54.3	50.0	109	70-135	

Lab Batch #: 966421 **Sample:** 691490-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/21/15 00:55

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 966445 **Sample:** 691502-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/20/15 23:44

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	54.6	50.0	109	70-135	

Lab Batch #: 966421 **Sample:** 691490-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/21/15 01:12

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0330	0.0300	110	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Orders : 506301,506397 **Project ID:** SRS#2013-044

Lab Batch #: 966421 **Sample:** 506270-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/21/15 01:29

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0350	0.0300	117	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 966445 **Sample:** 506270-010 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/21/15 03:53

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.9	124	70-135	
o-Terphenyl	38.4	50.0	77	70-135	

Lab Batch #: 966421 **Sample:** 506270-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/21/15 01:45

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0330	0.0300	110	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 966445 **Sample:** 506270-010 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/21/15 04:16

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.8	124	70-135	
o-Terphenyl	36.9	49.9	74	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.

Version: 1.%

XENCO Laboratories

BS / BSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 506301,506397 **Project ID:** SRS#2013-044

Analyst: ARM **Date Prepared:** 04/20/2015 **Date Analyzed:** 04/21/2015

Lab Batch ID: 966421 **Sample:** 691490-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0953	95	0.100	0.0962	96	1	70-130	35	
Toluene	<0.00200	0.100	0.0975	98	0.100	0.0980	98	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.101	101	0.100	0.101	101	0	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.202	101	0.200	0.201	101	0	70-135	35	
o-Xylene	<0.00100	0.100	0.101	101	0.100	0.101	101	0	71-133	35	

Analyst: ARM **Date Prepared:** 04/20/2015 **Date Analyzed:** 04/20/2015

Lab Batch ID: 966445 **Sample:** 691502-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	1060	106	1000	1010	101	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1010	101	1000	1000	100	1	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

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order # : 506301,506397 **Project ID:** SRS#2013-044

Lab Batch ID: 966421 **QC- Sample ID:** 506270-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/21/2015 **Date Prepared:** 04/20/2015 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00128	0.128	0.127	99	0.127	0.113	89	12	70-130	35	
Toluene	<0.00255	0.128	0.111	87	0.127	0.103	81	7	70-130	35	
Ethylbenzene	<0.00128	0.128	0.117	91	0.127	0.107	84	9	71-129	35	
m_p-Xylenes	<0.00255	0.255	0.225	88	0.255	0.209	82	7	70-135	35	
o-Xylene	<0.00128	0.128	0.128	100	0.127	0.113	89	12	71-133	35	

Lab Batch ID: 966445 **QC- Sample ID:** 506270-010 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/21/2015 **Date Prepared:** 04/20/2015 **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	<16.3	1090	1130	104	1090	1100	101	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<16.3	1090	1240	114	1090	1300	119	5	70-135	35	

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

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

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

Laboratories

Sample Duplicate Recovery

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 506301,506397

Lab Batch #: 966423 **Project ID:** SRS#2013-044

Date Analyzed: 04/20/2015 17:00 **Date Prepared:** 04/20/2015 **Analyst:** WRU

QC- Sample ID: 506293-021 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	9.56	9.94	4	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

Version: 1.%

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 04/18/2015 01:45:00 PM

Work Order #: 506301,506397

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: 04/20/2015

Checklist reviewed by: Date: 04/20/2015

CHAIN OF CUSTODY RECORD

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

LAB W.O #: 500301

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 J. Arguijo	Email:	bjarguijo@basinenv.com
Project ID:	Palladium 7-1 4-Inch Poly SRS #: 2013-044	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: Steve Taylor

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	GC TPH	GC BTEX	GC Chloride							Hold Sample (CALL ___) Run PAH on Highest TPH ___ Only if
								Pres Type**		I	I	I							
								# Cont	Lab Only:										
1	HA-1 @ 0.5'	4/16/2015	0930	S			1			X	X								
2	HA-1 @ 1'	4/16/2015	0945	S			1			X	X	~~X~~ 4/17/15							
3																			
4																			
5																			
6																			
7																			
8																			
9																			
0																			

* Container Type Codes

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

Other _____

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

** Preservative Type Codes

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

^ Matrix Type Codes

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

Other _____

REMARKS

Reg. Program / Clean-up Std	STATE for Certs & Regs	QA/QC Level & Certification	EDDs	COC & Labels	Coolers Temp °C
CTLs TRRP DW NPDES LPST DryCln Other:	FL TX GA NC SC NJ PA OK LA AL NM Other:	1 **2** 3 4 CLP AFCEE QAPP NELAC DoD-ELAP Other:	ADaPT SEDD ERPIMS XLS Other:	Match Incomplete Absent Unclear	12.5°C 2 3

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1		Basin Env	4/16/15	4:55pm		MD	4/16/15	455
2					Julian M	Xenco	4-18-15	13:45
3								
4								

Lab Use Only

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

C.O.C. Serial #

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

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

 Revision Date: Nov 12, 2009

CHAIN OF CUSTODY RECORD

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

Page 1 of 1

LAB W.O#: 560397

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:	Palladium 7-1 4-inch Poly SRS #: 2013-044	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: Steve Taylor

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

ANALYSES REQUESTED

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Cont Type * VC	Example Volatiles by 8260	TPH	BTEX	Chloride								Hold Sample (CALL ___) Run PAH on Highest TPH ___ Only if
								Pres Type**		I	I	I	I	I	I					
								# Cont	Lab Only:											
1	HA-1@3'	4/16/2015	1015	S			1		X	HOLD										
2	HA-1@5'	4/16/2015	1045	S			1		X											
3	HA-1@7' 6"	4/16/2015	1135	S			1		X											
4																				
5																				
6																				
7																				
8																				
9																				
10																				

* Container Type Codes

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

Other _____

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

** Preservative Type Codes

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

^ Matrix Type Codes

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

Other _____

REMARKS

****RUSH TPH on Surface Samples****

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 5 2 3

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	Steve Taylor	Basin Env	4/17/15	5:00	S Butler	MS	4/17/15	5:00
2					B. Rahman	Xenco	4.21.15	09:45
3								
4								

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

C.O.C. Serial #

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

 Revision Date: Nov 12, 2009

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 04/18/2015 01:45:00 PM

Work Order #: 506301, 506397

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: 04/20/2015

Checklist reviewed by: Date: 04/20/2015

Analytical Report 507094

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Palladium 7-1 4-Inch Poly

SRS#2013-044

08-MAY-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-18), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

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

08-MAY-15

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

Reference: XENCO Report No(s): **507094**
Palladium 7-1 4-Inch Poly
Project Address:

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) 507094. 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. 507094 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 507094

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TT-1 @13'	S	04-29-15 11:49		507094-001
TT-1 @20'	S	04-29-15 13:00		507094-002
SP-N	S	04-29-15 14:15		507094-003
SP-S	S	04-29-15 14:05		507094-004
SP-E	S	04-29-15 14:00		507094-005
SP-W	S	04-29-15 14:10		507094-006

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Palladium 7-1 4-Inch Poly

Project ID:	*SRS#2013-044*	Report Date:	*08-MAY-15*
Work Order Number(s):	*507094*	Date Received:	*05/01/2015*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Hits Summary 507094

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id : **TT-1 @13'**
Lab Sample Id : 507094-001

Matrix : Soil
Date Collected : 04.29.15 11.49
Date Received : 05.01.15 12.00

% Moisture : 7.49
Basis : Dry Weight

Analytical Method : BTEX by EPA 8021
Seq Number 967656

Prep Method: SW5030B
Date Prep: 05.06.15 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Toluene	108-88-3	6.12	mg/kg	05.07.15 15.57		50
Ethylbenzene	100-41-4	4.54	mg/kg	05.07.15 15.57		50
m_p-Xylenes	179601-23-1	15.7	mg/kg	05.07.15 15.57		50
o-Xylene	95-47-6	5.56	mg/kg	05.07.15 15.57		50
Xylenes, Total	1330-20-7	21.3	mg/kg	05.07.15 15.57		50
Total BTEX		31.9	mg/kg	05.07.15 15.57		50

Analytical Method : TPH by SW8015 Mod
Seq Number 967301

Prep Method: TX1005P
Date Prep: 05.01.15 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C12 Gasoline Range Hydrocarbons	PHC612	3470	mg/kg	05.02.15 11.14		5
C12-C28 Diesel Range Hydrocarbons	PHCG1028	8460	mg/kg	05.02.15 11.14		5
C28-C35 Oil Range Hydrocarbons	PHCG2835	260	mg/kg	05.02.15 11.14		5
Total TPH	PHC635	12200	mg/kg	05.02.15 11.14		5

Hits Summary 507094

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id : **TT-1 @20'**
Lab Sample Id : 507094-002

Matrix : Soil
Date Collected : 04.29.15 13.00
Date Received : 05.01.15 12.00

% Moisture : 6.6
Basis : Dry Weight

Analytical Method : BTEX by EPA 8021
Seq Number 967656

Prep Method: SW5030B
Date Prep: 05.06.15 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Toluene	108-88-3	16.4	mg/kg	05.07.15 16.14		100
Ethylbenzene	100-41-4	13.7	mg/kg	05.07.15 16.14		100
m_p-Xylenes	179601-23-1	45.8	mg/kg	05.07.15 16.14		100
o-Xylene	95-47-6	17.0	mg/kg	05.07.15 16.14		100
Xylenes, Total	1330-20-7	62.8	mg/kg	05.07.15 16.14		100
Total BTEX		92.9	mg/kg	05.07.15 16.14		100

Analytical Method : Inorganic Anions by EPA 300/300.1
Seq Number 967292

Prep Method: E300P
Date Prep: 05.01.15 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3.57	mg/kg	05.02.15 03.37		1

Analytical Method : TPH by SW8015 Mod
Seq Number 967301

Prep Method: TX1005P
Date Prep: 05.01.15 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C12 Gasoline Range Hydrocarbons	PHC612	1750	mg/kg	05.02.15 11.35		5
C12-C28 Diesel Range Hydrocarbons	PHCG1028	5330	mg/kg	05.02.15 11.35		5
C28-C35 Oil Range Hydrocarbons	PHCG2835	167	mg/kg	05.02.15 11.35		5
Total TPH	PHC635	7250	mg/kg	05.02.15 11.35		5

Sample Id : **SP-N**
Lab Sample Id : 507094-003

Matrix : Soil
Date Collected : 04.29.15 14.15
Date Received : 05.01.15 12.00

% Moisture : 6.06
Basis : Dry Weight

Analytical Method : TPH by SW8015 Mod
Seq Number 967301

Prep Method: TX1005P
Date Prep: 05.01.15 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C12 Gasoline Range Hydrocarbons	PHC612	30.2	mg/kg	05.02.15 11.56		1
C12-C28 Diesel Range Hydrocarbons	PHCG1028	1600	mg/kg	05.02.15 11.56		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	55.6	mg/kg	05.02.15 11.56		1
Total TPH	PHC635	1690	mg/kg	05.02.15 11.56		1

Hits Summary 507094

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id : **SP-S**
Lab Sample Id : 507094-004

Matrix : Soil
Date Collected : 04.29.15 14.05
Date Received : 05.01.15 12.00

% Moisture : 2.4
Basis : Dry Weight

Analytical Method : TPH by SW8015 Mod
Seq Number 967301

Prep Method: TX1005P
Date Prep: 05.01.15 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C12 Gasoline Range Hydrocarbons	PHC612	337	mg/kg	05.02.15 13.00		1
C12-C28 Diesel Range Hydrocarbons	PHCG1028	4660	mg/kg	05.02.15 13.00		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	226	mg/kg	05.02.15 13.00		1
Total TPH	PHC635	5220	mg/kg	05.02.15 13.00		1

Sample Id : **SP-E**
Lab Sample Id : 507094-005

Matrix : Soil
Date Collected : 04.29.15 14.00
Date Received : 05.01.15 12.00

% Moisture : 3.62
Basis : Dry Weight

Analytical Method : TPH by SW8015 Mod
Seq Number 967301

Prep Method: TX1005P
Date Prep: 05.01.15 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C12-C28 Diesel Range Hydrocarbons	PHCG1028	66.6	mg/kg	05.02.15 13.21		1
Total TPH	PHC635	66.6	mg/kg	05.02.15 13.21		1

Sample Id : **SP-W**
Lab Sample Id : 507094-006

Matrix : Soil
Date Collected : 04.29.15 14.10
Date Received : 05.01.15 12.00

% Moisture : 11.88
Basis : Dry Weight

Analytical Method : TPH by SW8015 Mod
Seq Number 967301

Prep Method: TX1005P
Date Prep: 05.01.15 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C12-C28 Diesel Range Hydrocarbons	PHCG1028	108	mg/kg	05.02.15 13.43		1
Total TPH	PHC635	108	mg/kg	05.02.15 13.43		1

XENCO Laboratories

Certificate of Analysis Summary 507094

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Palladium 7-1 4-Inch Poly

Project Id: SRS#2013-044
Contact: Ben Arguijo
Project Location:

Date Received in Lab: Fri May-01-15 12:00 pm
Report Date: 08-MAY-15
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	507094-001		507094-002		507094-003		507094-004		507094-005		507094-006	
	Field Id:	TT-1 @13'		TT-1 @20'		SP-N		SP-S		SP-E		SP-W	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-29-15 11:49		Apr-29-15 13:00		Apr-29-15 14:15		Apr-29-15 14:05		Apr-29-15 14:00		Apr-29-15 14:10	
BTEX by EPA 8021	Extracted:	May-06-15 16:00		May-06-15 16:00									
	Analyzed:	May-07-15 15:57		May-07-15 16:14									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene		ND	0.0540	ND	0.107								
Toluene		6.12	0.108	16.4	0.214								
Ethylbenzene		4.54	0.0540	13.7	0.107								
m_p-Xylenes		15.7	0.108	45.8	0.214								
o-Xylene		5.56	0.0540	17.0	0.107								
Xylenes, Total		21.3	0.0540	62.8	0.107								
Total BTEX		31.9	0.0540	92.9	0.107								
Inorganic Anions by EPA 300/300.1	Extracted:			May-01-15 15:00									
	Analyzed:			May-02-15 03:37									
	Units/RL:			mg/kg	RL								
Chloride				3.57	2.14								
Percent Moisture	Extracted:												
	Analyzed:	May-01-15 17:00		May-01-15 17:00		May-01-15 17:00		May-01-15 17:00		May-01-15 17:00		May-01-15 17:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		7.49	1.00	6.60	1.00	6.06	1.00	2.40	1.00	3.62	1.00	11.9	1.00
TPH by SW8015 Mod	Extracted:	May-01-15 16:00		May-01-15 16:00		May-01-15 16:00		May-01-15 16:00		May-01-15 16:00		May-01-15 16:00	
	Analyzed:	May-02-15 11:14		May-02-15 11:35		May-02-15 11:56		May-02-15 13:00		May-02-15 13:21		May-02-15 13:43	
	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		3470	80.7	1750	80.0	30.2	15.9	337	15.4	ND	15.5	ND	17.0
C12-C28 Diesel Range Hydrocarbons		8460	80.7	5330	80.0	1600	15.9	4660	15.4	66.6	15.5	108	17.0
C28-C35 Oil Range Hydrocarbons		260	80.7	167	80.0	55.6	15.9	226	15.4	ND	15.5	ND	17.0
Total TPH		12200	80.7	7250	80.0	1690	15.9	5220	15.4	66.6	15.5	108	17.0

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: Palladium 7-1 4-Inch Poly

Work Orders : 507094,

Project ID: SRS#2013-044

Lab Batch #: 967301 **Sample:** 507094-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/02/15 11:14

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	99.6	126	70-135	
o-Terphenyl	50.1	49.8	101	70-135	

Lab Batch #: 967301 **Sample:** 507094-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/02/15 11:35

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.6	118	70-135	
o-Terphenyl	49.9	49.8	100	70-135	

Lab Batch #: 967301 **Sample:** 507094-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/02/15 11:56

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.8	112	70-135	
o-Terphenyl	57.9	49.9	116	70-135	

Lab Batch #: 967301 **Sample:** 507094-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/02/15 13:00

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.9	111	70-135	
o-Terphenyl	55.1	50.0	110	70-135	

Lab Batch #: 967301 **Sample:** 507094-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/02/15 13:21

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.8	109	70-135	
o-Terphenyl	54.0	49.9	108	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: Palladium 7-1 4-Inch Poly

Work Orders : 507094,

Project ID: SRS#2013-044

Lab Batch #: 967301 **Sample:** 507094-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/02/15 13:43

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	99.7	113	70-135	
o-Terphenyl	57.1	49.9	114	70-135	

Lab Batch #: 967656 **Sample:** 507094-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/07/15 15:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 967656 **Sample:** 507094-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/07/15 16:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 967301 **Sample:** 692051-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/02/15 04:26

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	52.8	50.0	106	70-135	

Lab Batch #: 967656 **Sample:** 692215-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/07/15 06:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	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: Palladium 7-1 4-Inch Poly

Work Orders : 507094,

Project ID: SRS#2013-044

Lab Batch #: 967301 **Sample:** 692051-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/02/15 04:50

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	48.7	50.0	97	70-135	

Lab Batch #: 967656 **Sample:** 692215-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/07/15 06:22

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

Lab Batch #: 967301 **Sample:** 692051-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/02/15 05:13

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

Lab Batch #: 967656 **Sample:** 692215-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/07/15 06:38

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 967301 **Sample:** 507062-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/02/15 06:20

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.7	121	70-135	
o-Terphenyl	63.0	49.9	126	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Orders : 507094,

Project ID: SRS#2013-044

Lab Batch #: 967656 **Sample:** 507210-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/07/15 06:55

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0337	0.0300	112	80-120	

Lab Batch #: 967301 **Sample:** 507062-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/02/15 06:43

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.8	111	70-135	
o-Terphenyl	48.2	49.9	97	70-135	

Lab Batch #: 967656 **Sample:** 507210-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/07/15 07:11

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories

BS / BSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 507094 **Project ID:** SRS#2013-044

Analyst: ARM **Date Prepared:** 05/06/2015 **Date Analyzed:** 05/07/2015

Lab Batch ID: 967656 **Sample:** 692215-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BTEX by EPA 8021	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
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	0.0974	97	0.100	0.0977	98	0	70-130	35	
Toluene	<0.00200	0.100	0.101	101	0.100	0.101	101	0	70-130	35	
Ethylbenzene	<0.00100	0.100	0.104	104	0.100	0.104	104	0	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.209	105	0.200	0.208	104	0	70-135	35	
o-Xylene	<0.00100	0.100	0.105	105	0.100	0.105	105	0	71-133	35	

Analyst: JUM **Date Prepared:** 05/01/2015 **Date Analyzed:** 05/01/2015

Lab Batch ID: 967292 **Sample:** 692038-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

Inorganic Anions by EPA 300/300.1	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<2.00	50.0	52.9	106	50.0	53.2	106	1	90-110	20	

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

BS / BSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 507094 **Project ID:** SRS#2013-044

Analyst: ARM **Date Prepared:** 05/01/2015 **Date Analyzed:** 05/02/2015

Lab Batch ID: 967301 **Sample:** 692051-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

TPH by SW8015 Mod Analytes	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
	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	905	91	1000	915	92	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	963	96	1000	964	96	0	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: Palladium 7-1 4-Inch Poly

Work Order #: 507094

Lab Batch #: 967292 **Project ID:** SRS#2013-044

Date Analyzed: 05/01/2015 **Date Prepared:** 05/01/2015 **Analyst:** JUM

QC- Sample ID: 506833-011 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	<2.06	51.5	56.2	109	80-120	

Lab Batch #: 967292

Date Analyzed: 05/01/2015 **Date Prepared:** 05/01/2015 **Analyst:** JUM

QC- Sample ID: 506903-001 S **Batch #:** 1 **Matrix:** Solid

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	23.8	299	308	95	80-120	

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

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order # : 507094 **Project ID:** SRS#2013-044

Lab Batch ID: 967656 **QC- Sample ID:** 507210-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/07/2015 **Date Prepared:** 05/06/2015 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00115	0.115	0.105	91	0.116	0.103	89	2	70-130	35	
Toluene	<0.00231	0.115	0.102	89	0.116	0.103	89	1	70-130	35	
Ethylbenzene	<0.00115	0.115	0.107	93	0.116	0.107	92	0	71-129	35	
m_p-Xylenes	<0.00231	0.231	0.208	90	0.231	0.207	90	0	70-135	35	
o-Xylene	<0.00115	0.115	0.112	97	0.116	0.112	97	0	71-133	35	

Lab Batch ID: 967301 **QC- Sample ID:** 507062-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/02/2015 **Date Prepared:** 05/01/2015 **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	<16.7	1110	1030	93	1110	995	90	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	494	1110	1690	108	1110	1470	88	14	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.

Laboratories

Sample Duplicate Recovery

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 507094

Lab Batch #: 967296 **Project ID:** SRS#2013-044

Date Analyzed: 05/01/2015 17:00 **Date Prepared:** 05/01/2015 **Analyst:** WRU

QC- Sample ID: 507031-033 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	16.6	17.4	5	20	

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

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

Work Order #: 507094

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	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: 05/01/2015

Checklist reviewed by: Julian Martinez Date: 05/01/2015

CHAIN OF CUSTODY RECORD

XENCO Laboratories
Environmental Asbestos Radiochemistry
;roool-c

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

Page 1 of 1

LAB W.O#: 405709

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 J. Arguijo	Email:	bjarguijo@basinenv.com
Project ID:	Palladium 7-1 4-Inch Poly SRS #: 2013-044	PO#:	PAA-C. Bryant
Invoice To:	Camille Bryant Plains All American	Quote #:	
Sampler Name:	Matt Taylor	Circle One Event:	Daily Weekly Monthly Quarterly Semi-Annual Annual N/A

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

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

ANALYSES REQUESTED

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Cont Type * VC	Pres Type**	Example Volatiles by 8260	TPH	Chloride	BTEX							Hold Sample (CALL ___) Run PAH on Highest TPH ___ Only if
											GC	GC	GC							
								# Cont	Lab Only:		I	I	I							
1	TT-1 @ 13'	4/29/2015	1149	S			1				X		HOLD							
2	TT-1 @ 20'	4/29/2015	1300	S			1				X	X								
3	SP-N	4/29/2015	1415	S			1				X									
4	SP-S	4/29/2015	1405	S			1				X									
5	SP-E	4/29/2015	1400	S			1				X									
6	SP-W	4/29/2015	1410	S			1				X									
7																				
8																				
9																				
10																				

* Container Type Codes

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

Other _____

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

** Preservative Type Codes

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

O. _____

^ Matrix Type Codes

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

Other _____

REMARKS

Need TPH results by 5/1.

****RUSH****

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

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	Matt Taylor	BasinENV	4/29/15	1700		BasinENV	4/29/15	1700
2		BasinENV	4/30/15	1345				
3	Thomas Runyan	BasinENV	4-30-15	1:45		MCCO	5/1/15	1000
4	Thomas Runyan	BASINENV	4:30:15	3:46		MS	4/30	2410

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 #

XENCO 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

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

 Revision Date: Nov 12, 2009

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

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

Work Order #: 507094

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	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: 05/01/2015

Checklist reviewed by: Julian Martinez Date: 05/01/2015

Analytical Report 508275

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Palladium 7-1 4-Inch Poly

SRS#2013-044

26-MAY-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-18), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

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

26-MAY-15

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

Reference: XENCO Report No(s): **508275**
Palladium 7-1 4-Inch Poly
Project Address:

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) 508275. 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. 508275 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 508275

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TT-1@24'	S	05-21-15 13:30		508275-001
TT-1@26'	S	05-21-15 13:45		508275-002

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Palladium 7-1 4-Inch Poly

Project ID:	*SRS#2013-044*	Report Date:	*26-MAY-15*
Work Order Number(s):	*508275*	Date Received:	*05/22/2015*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 508275

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Palladium 7-1 4-Inch Poly

Project Id: SRS#2013-044
Contact: Ben Arguijo
Project Location:

Date Received in Lab: Fri May-22-15 10:10 am
Report Date: 26-MAY-15
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	508275-001		508275-002					
	Field Id:	TT-1@24'		TT-1@26'					
	Depth:								
	Matrix:	SOIL		SOIL					
	Sampled:	May-21-15 13:30		May-21-15 13:45					
BTEX by EPA 8021	***Extracted:***	May-26-15 07:00		May-26-15 07:00					
	Analyzed:	May-26-15 12:19		May-26-15 12:36					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		0.245	0.0994	1.20	0.0994				
Toluene		10.6	0.199	18.8	0.199				
Ethylbenzene		8.46	0.0994	10.9	0.0994				
m_p-Xylenes		25.6	0.199	32.7	0.199				
o-Xylene		10.0	0.0994	12.6	0.0994				
Xylenes, Total		35.6	0.0994	45.3	0.0994				
Total BTEX		54.9	0.0994	76.2	0.0994				
Percent Moisture	***Extracted:***								
	Analyzed:	May-21-15 18:30		May-21-15 18:30					
	Units/RL:	%	RL	%	RL				
Percent Moisture		16.6	1.00	14.1	1.00				
Total Petroleum Hydrocarbons by Texas 1005	***Extracted:***	May-26-15 07:00		May-26-15 07:00					
	Analyzed:	May-26-15 10:31		May-26-15 10:55					
	Units/RL:	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		1930	125	1920	125				
C12-C28 Diesel Range Hydrocarbons		3990	125	3900	125				
C28-C35 Oil Range Hydrocarbons		160	125	174	125				
Total TPH 1005		6080	125	5990	125				

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 **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: Palladium 7-1 4-Inch Poly

Work Orders : 508275,

Project ID: SRS#2013-044

Lab Batch #: 968802 **Sample:** 508275-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/15 10:31

Total Petroleum Hydrocarbons by Texas 1005 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	58.4	50.0	117	70-130	
1-Chlorooctane	129	99.9	129	70-130	

Lab Batch #: 968802 **Sample:** 508275-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/15 10:55

Total Petroleum Hydrocarbons by Texas 1005 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	61.6	49.8	124	70-130	
1-Chlorooctane	124	99.6	124	70-130	

Lab Batch #: 968804 **Sample:** 508275-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/15 12:19

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0317	0.0300	106	80-120	

Lab Batch #: 968804 **Sample:** 508275-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/15 12:36

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 968802 **Sample:** 692968-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/26/15 09:27

Total Petroleum Hydrocarbons by Texas 1005 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	55.7	50.0	111	70-130	
1-Chlorooctane	109	100	109	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Orders : 508275,

Project ID: SRS#2013-044

Lab Batch #: 968804 **Sample:** 692965-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/26/15 10:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 968802 **Sample:** 692968-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/26/15 09:48

SURROGATE RECOVERY STUDY

Total Petroleum Hydrocarbons by Texas 1005

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	51.0	50.0	102	70-130	
1-Chlorooctane	117	100	117	70-130	

Lab Batch #: 968804 **Sample:** 692965-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/26/15 10:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 968802 **Sample:** 692968-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/26/15 10:09

SURROGATE RECOVERY STUDY

Total Petroleum Hydrocarbons by Texas 1005

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	50.2	50.0	100	70-130	
1-Chlorooctane	117	100	117	70-130	

Lab Batch #: 968804 **Sample:** 692965-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/26/15 10:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0317	0.0300	106	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Orders : 508275,

Project ID: SRS#2013-044

Lab Batch #: 968804 **Sample:** 508259-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/15 11:13

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 968802 **Sample:** 508259-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/15 12:24

Total Petroleum Hydrocarbons by Texas 1005 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	44.5	49.9	89	70-130	
1-Chlorooctane	127	99.7	127	70-130	

Lab Batch #: 968804 **Sample:** 508259-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/15 11:30

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 968802 **Sample:** 508259-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/15 12:46

Total Petroleum Hydrocarbons by Texas 1005 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	56.6	49.9	113	70-130	
1-Chlorooctane	128	99.7	128	70-130	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 508275 **Project ID:** SRS#2013-044

Analyst: ARM **Date Prepared:** 05/26/2015 **Date Analyzed:** 05/26/2015

Lab Batch ID: 968804 **Sample:** 692965-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0968	97	0.100	0.0992	99	2	70-130	35	
Toluene	<0.00200	0.100	0.103	103	0.100	0.105	105	2	70-130	35	
Ethylbenzene	<0.00100	0.100	0.110	110	0.100	0.112	112	2	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.219	110	0.200	0.223	112	2	70-135	35	
o-Xylene	<0.00100	0.100	0.109	109	0.100	0.111	111	2	71-133	35	

Analyst: ARM **Date Prepared:** 05/26/2015 **Date Analyzed:** 05/26/2015

Lab Batch ID: 968802 **Sample:** 692968-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Total Petroleum Hydrocarbons by Texas 1005 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<25.0	1000	920	92	1000	931	93	1	70-130	30	
C12-C28 Diesel Range Hydrocarbons	<25.0	1000	967	97	1000	984	98	2	70-130	30	

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

Form 3 - MS / MSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order # : 508275 **Project ID:** SRS#2013-044

Lab Batch ID: 968804 **QC- Sample ID:** 508259-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/26/2015 **Date Prepared:** 05/26/2015 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00118	0.118	0.106	90	0.118	0.104	88	2	70-130	35	
Toluene	<0.00237	0.118	0.112	95	0.118	0.110	93	2	70-130	35	
Ethylbenzene	<0.00118	0.118	0.119	101	0.118	0.115	97	3	71-129	35	
m_p-Xylenes	<0.00237	0.237	0.236	100	0.236	0.229	97	3	70-135	35	
o-Xylene	<0.00118	0.118	0.118	100	0.118	0.115	97	3	71-133	35	

Lab Batch ID: 968802 **QC- Sample ID:** 508259-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/26/2015 **Date Prepared:** 05/26/2015 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Total Petroleum Hydrocarbons by Texas 1005 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	<29.6	1180	1270	108	1180	1180	100	7	70-130	30	
C12-C28 Diesel Range Hydrocarbons	<29.6	1180	1390	118	1180	1280	108	8	70-130	30	

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.

Sample Duplicate Recovery

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 508275

Lab Batch #: 968731 **Project ID:** SRS#2013-044

Date Analyzed: 05/21/2015 18:30 **Date Prepared:** 05/21/2015 **Analyst:** WRU

QC- Sample ID: 508259-009 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	21.2	22.2	5	20	

Lab Batch #: 968731

Date Analyzed: 05/21/2015 18:30 **Date Prepared:** 05/21/2015 **Analyst:** WRU

QC- Sample ID: 508275-001 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	16.6	17.0	2	20	

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 05/22/2015 10:10:00 AM

Work Order #: 508275

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**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? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: 05/22/2015

Checklist reviewed by: Kelsey Brooks Date: 05/22/2015

CHAIN OF CUSTODY RECORD

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

Page 1 of 1

LAB W.O#: 508275

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 J. Arguijo	Email:	bjarguijo@basinenv.com
Project ID:	Palladium 7-1 4-Inch Poly SRS #: 2013-044	PO#:	PAA-C. Bryant
Invoice To:	Camille Bryant Plains All American	Quote #:	
Sampler Name:	Steve Taylor	Circle One Event:	Daily Weekly Monthly Quartely Semi-Annual Annual N/A

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

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

ANALYSES REQUESTED

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Cont Type * VC	Example Volatiles by 8260	TPH	BTEX								Hold Sample (CALL) on Highest TPH	Run PAH Only if
								Pres Type**		GC	GC									
								# Cont	Lab Only:	I	I									
1	TT-1 @ 24'	5/21/2015	1330	S			1			X	HOLD									
2	TT-1 @ 26'	5/21/2015	1345	S			1			X										
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

* Container Type Codes

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

Other _____

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

** Preservative Type Codes

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

O. _____

^ Matrix Type Codes

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

Other _____

REMARKS

**** [redacted] ****

**** [redacted] ****

Reg. Program / Clean-up Std	STATE for Certs & Regs	QA/QC Level & Certification	EDDs	COC & Labels	Coolers Temp °C
LUST 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	1234 2 2 3

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	[signature]	Basin	5/21/15	3:45pm	[signature]	MS	5/21/15	345pm
2					[signature]	xenco	5/22/15	1010
3								
4								

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

C.O.C. Serial #

 Revision Date: Nov 12, 2009

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 05/22/2015 10:10:00 AM

Work Order #: 508275

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**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? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: 05/22/2015

Checklist reviewed by: Kelsey Brooks Date: 05/22/2015

Analytical Report 508871

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Palladium 7-1 4-Inch Poly

SRS#2013-044

08-JUN-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-18), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

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

08-JUN-15

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

Reference: XENCO Report No(s): **508871**
Palladium 7-1 4-Inch Poly
Project Address:

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) 508871. 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. 508871 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 508871

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
#1 @ 3.5'	S	06-01-15 12:00	- 3.5 ft	508871-001
#2 @ 3.5'	S	06-01-15 12:02	- 3.5 ft	508871-002
#3 @ 3.5'	S	06-01-15 12:04	- 3.5 ft	508871-003
#4 @ 3.5'	S	06-01-15 12:06	- 3.5 ft	508871-004
#5 @ 3.5'	S	06-01-15 12:08	- 3.5 ft	508871-005
#6 @ 3.5'	S	06-01-15 12:10	- 3.5 ft	508871-006
#7 @ 3.5'	S	06-01-15 12:12	- 3.5 ft	508871-007
#8 @ 3.5'	S	06-01-15 12:14	- 3.5 ft	508871-008
#9 @ 10'	S	06-01-15 12:16	- 10 ft	508871-009
#10 @ 10'	S	06-01-15 12:18	- 10 ft	508871-010

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Palladium 7-1 4-Inch Poly

Project ID:	*SRS#2013-044*	Report Date:	*08-JUN-15*
Work Order Number(s):	*508871*	Date Received:	*06/03/2015*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

XENCO Laboratories

Certificate of Analysis Summary 508871

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Palladium 7-1 4-Inch Poly

Project Id: SRS#2013-044
Contact: Ben Arguijo
Project Location:

Date Received in Lab: Wed Jun-03-15 09:45 am
Report Date: 08-JUN-15
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	508871-001		508871-002		508871-003		508871-004		508871-005		508871-006	
	Field Id:	#1 @ 3.5'		#2 @ 3.5'		#3 @ 3.5'		#4 @ 3.5'		#5 @ 3.5'		#6 @ 3.5'	
	Depth:	3.5 ft		3.5 ft		3.5 ft		3.5 ft		3.5 ft		3.5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-01-15 12:00		Jun-01-15 12:02		Jun-01-15 12:04		Jun-01-15 12:06		Jun-01-15 12:08		Jun-01-15 12:10	
Percent Moisture	Extracted:												
	Analyzed:	Jun-05-15 17:00		Jun-05-15 17:00		Jun-05-15 17:00		Jun-05-15 17:00		Jun-05-15 17:00		Jun-05-15 17:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		1.78	1.00	3.46	1.00	12.6	1.00	15.8	1.00	7.84	1.00	11.7	1.00
TPH by SW8015 Mod	Extracted:	Jun-04-15 15:00		Jun-04-15 15:00		Jun-04-15 15:00		Jun-04-15 15:00		Jun-04-15 15:00		Jun-04-15 15:00	
	Analyzed:	Jun-04-15 21:10		Jun-04-15 21:31		Jun-04-15 21:52		Jun-04-15 22:13		Jun-04-15 22:36		Jun-04-15 23:39	
	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		1380	76.1	226	15.5	ND	17.2	ND	17.8	1020	16.2	ND	17.0
C12-C28 Diesel Range Hydrocarbons		9020	76.1	3170	15.5	86.8	17.2	24.0	17.8	4670	16.2	103	17.0
C28-C35 Oil Range Hydrocarbons		1540	76.1	127	15.5	ND	17.2	ND	17.8	172	16.2	ND	17.0
Total TPH		11900	76.1	3520	15.5	86.8	17.2	24.0	17.8	5860	16.2	103	17.0

Kelsey Brooks
Project Manager

Final 1.000

Certificate of Analysis Summary 508871

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Palladium 7-1 4-Inch Poly

Project Id: SRS#2013-044
Contact: Ben Arguijo
Project Location:

Date Received in Lab: Wed Jun-03-15 09:45 am
Report Date: 08-JUN-15
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	508871-007		508871-008		508871-009		508871-010					
	Field Id:	#7 @ 3.5'		#8 @ 3.5'		#9 @ 10'		#10 @ 10'					
	Depth:	3.5 ft		3.5 ft		10 ft		10 ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Jun-01-15 12:12		Jun-01-15 12:14		Jun-01-15 12:16		Jun-01-15 12:18					
Percent Moisture	*Extracted:*												
	Analyzed:	Jun-05-15 17:00		Jun-05-15 17:00		Jun-05-15 17:00		Jun-05-15 17:00					
	Units/RL:	%	RL	%	RL	%	RL	%	RL				
Percent Moisture		10.5	1.00	10.8	1.00	8.93	1.00	9.45	1.00				
TPH by SW8015 Mod	*Extracted:*	Jun-04-15 15:00		Jun-04-15 15:00		Jun-04-15 15:00		Jun-04-15 15:00					
	Analyzed:	Jun-05-15 00:01		Jun-05-15 00:22		Jun-05-15 00:44		Jun-05-15 01:06					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		81.7	16.7	75.9	16.7	2490	82.3	6310	82.7				
C12-C28 Diesel Range Hydrocarbons		478	16.7	1470	16.7	8140	82.3	12700	82.7				
C28-C35 Oil Range Hydrocarbons		ND	16.7	45.4	16.7	268	82.3	448	82.7				
Total TPH		560	16.7	1590	16.7	10900	82.3	19500	82.7				

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 **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: Palladium 7-1 4-Inch Poly

Work Orders : 508871,

Project ID: SRS#2013-044

Lab Batch #: 969565 **Sample:** 508871-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/04/15 21:10

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.7	129	70-135	
o-Terphenyl	59.0	49.9	118	70-135	

Lab Batch #: 969565 **Sample:** 508871-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/04/15 21:31

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.9	115	70-135	
o-Terphenyl	58.4	50.0	117	70-135	

Lab Batch #: 969565 **Sample:** 508871-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/04/15 21:52

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	61.6	50.0	123	70-135	

Lab Batch #: 969565 **Sample:** 508871-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/04/15 22:13

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.7	103	70-135	
o-Terphenyl	53.7	49.9	108	70-135	

Lab Batch #: 969565 **Sample:** 508871-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/04/15 22:36

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	99.8	130	70-135	
o-Terphenyl	62.9	49.9	126	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Orders : 508871,

Project ID: SRS#2013-044

Lab Batch #: 969565 **Sample:** 508871-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/04/15 23:39

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.8	111	70-135	
o-Terphenyl	57.3	49.9	115	70-135	

Lab Batch #: 969565 **Sample:** 508871-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/05/15 00:01

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.7	118	70-135	
o-Terphenyl	60.0	49.9	120	70-135	

Lab Batch #: 969565 **Sample:** 508871-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/05/15 00:22

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	99.6	117	70-135	
o-Terphenyl	60.8	49.8	122	70-135	

Lab Batch #: 969565 **Sample:** 508871-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/05/15 00:44

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.9	126	70-135	
o-Terphenyl	62.6	50.0	125	70-135	

Lab Batch #: 969565 **Sample:** 508871-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/05/15 01:06

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.9	105	70-135	
o-Terphenyl	64.4	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: Palladium 7-1 4-Inch Poly

Work Orders : 508871,

Project ID: SRS#2013-044

Lab Batch #: 969565 **Sample:** 693468-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/04/15 17:29

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	54.5	50.0	109	70-135	

Lab Batch #: 969565 **Sample:** 693468-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/04/15 17:53

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	49.9	50.0	100	70-135	

Lab Batch #: 969565 **Sample:** 693468-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/04/15 18:16

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	50.6	50.0	101	70-135	

Lab Batch #: 969565 **Sample:** 508884-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/04/15 19:01

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.7	129	70-135	
o-Terphenyl	57.8	49.9	116	70-135	

Lab Batch #: 969565 **Sample:** 508884-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/04/15 19:23

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.7	129	70-135	
o-Terphenyl	61.3	49.9	123	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories

BS / BSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 508871 **Project ID:** SRS#2013-044

Analyst: ARM **Date Prepared:** 06/04/2015 **Date Analyzed:** 06/04/2015

Lab Batch ID: 969565 **Sample:** 693468-1-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	899	90	1000	1040	104	15	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	897	90	1000	1060	106	17	70-135	35	

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

Form 3 - MS / MSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order # : 508871 **Project ID:** SRS#2013-044

Lab Batch ID: 969565 **QC- Sample ID:** 508884-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/04/2015 **Date Prepared:** 06/04/2015 **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	<16.6	1110	1130	102	1110	1200	108	6	70-135	35	
C12-C28 Diesel Range Hydrocarbons	131	1110	1180	95	1110	1240	100	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.

Laboratories

Sample Duplicate Recovery

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 508871

Lab Batch #: 969689 **Project ID:** SRS#2013-044

Date Analyzed: 06/05/2015 17:00 **Date Prepared:** 06/05/2015 **Analyst:** WRU

QC- Sample ID: 508871-001 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	1.78	2.11	17	20	

Lab Batch #: 969689

Date Analyzed: 06/05/2015 17:00 **Date Prepared:** 06/05/2015 **Analyst:** WRU

QC- Sample ID: 508884-001 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	9.78	10.2	4	20	

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

BRL - Below Reporting Limit

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 06/03/2015 09:45:00 AM

Work Order #: 508871

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: 06/03/2015

Checklist reviewed by: Kelsey Brooks Date: 06/03/2015

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

Page 1 of 1

LAB W.O#: 508871

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 J. Arguijo	Email:	bjarguijo@basinenv.com
Project ID:	Palladium 7-1 4-Inch Poly SRS #: 2013-044	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: Cameron Fisher

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	Example Volatiles by 8260	TPH	BTEX								Hold Sample (CALL) Run PAH on Highest TPH Only if
								Cont Type * VC		GC	GC								
								Pres Type**		I	I								
								Lab Only:											
1	#1	6/1/2015	1200	S			1			X	HOLD								
2	#2	6/1/2015	1202	S			1			X									
3	#3	6/1/2015	1204	S			1			X									
4	#4	6/1/2015	1206	S			1			X									
5	#5	6/1/2015	1208	S			1			X									
6	#6	6/1/2015	1210	S			1			X									
7	#7	6/1/2015	1212	S			1			X									
8	#8	6/1/2015	1214	S			1			X									
9	#9	6/1/2015	1216	S			1			X									
10	#10	6/1/2015	1218	S			1			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

Reg. Program / Clean-up Std	STATE for Certs & Regs	QA/QC Level & Certification	EDDs	COC & Labels	Coolers Temp °C
s TRRP DW NPDES LPST DryCln er:	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 1 2 3 3

Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
Cameron Fisher	Basin	6-1-15	17:00pm		Basin Env.	6/1/15	1700
Basin Env.	Basin Env.	6/2/15	1315		Basin	6/2/15	1315
	Basin	6/2/15	1624		Mail Services	6-7-15	1624
					XENCO	6/3/15	945

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 #

XENCO 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

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

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 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.

Revision Date: Nov 12, 2009

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 06/03/2015 09:45:00 AM

Work Order #: 508871

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: 06/03/2015

Checklist reviewed by: Kelsey Brooks Date: 06/03/2015

Analytical Report 509511

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Palladium 7-1 4-Inch Poly

SRS#2013-044

17-JUN-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-18), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

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

17-JUN-15

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

Reference: XENCO Report No(s): **509511**
Palladium 7-1 4-Inch Poly
Project Address:

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) 509511. 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. 509511 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 509511

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
#1b @ 9'	S	06-10-15 11:01	- 9 ft	509511-001
#3b @9'	S	06-10-15 11:15	- 9 ft	509511-002

Version: 1.%

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Palladium 7-1 4-Inch Poly

Project ID:	*SRS#2013-044*	Report Date:	*17-JUN-15*
Work Order Number(s):	*509511*	Date Received:	*06/11/2015*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 509511

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Palladium 7-1 4-Inch Poly

Project Id: SRS#2013-044
Contact: Ben Arguijo
Project Location:

Date Received in Lab: Thu Jun-11-15 03:05 pm
Report Date: 17-JUN-15
Project Manager: Kelsey Brooks

Analysis Requested								
	Lab Id:	509511-001		509511-002				
	Field Id:	#1b @ 9'		#3b @9'				
	Depth:	9 ft		9 ft				
	Matrix:	SOIL		SOIL				
	Sampled:	Jun-10-15 11:01		Jun-10-15 11:15				
Percent Moisture	Extracted:							
	Analyzed:	Jun-12-15 17:30		Jun-12-15 17:30				
	Units/RL:	%	RL	%	RL			
Percent Moisture		9.83	1.00	7.76	1.00			
TPH by SW8015 Mod	Extracted:	Jun-12-15 17:00		Jun-12-15 17:00				
	Analyzed:	Jun-13-15 11:27		Jun-13-15 12:40				
	Units/RL:	mg/kg	RL	mg/kg	RL			
C6-C12 Gasoline Range Hydrocarbons		ND	16.6	ND	16.3			
C12-C28 Diesel Range Hydrocarbons		ND	16.6	ND	16.3			
C28-C35 Oil Range Hydrocarbons		ND	16.6	ND	16.3			
Total TPH		ND	16.6	ND	16.3			

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

Version: 1.%

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 **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: Palladium 7-1 4-Inch Poly

Work Orders : 509511,

Project ID: SRS#2013-044

Lab Batch #: 970341 **Sample:** 509511-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/13/15 11:27

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.7	129	70-135	
o-Terphenyl	64.0	49.9	128	70-135	

Lab Batch #: 970341 **Sample:** 509511-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/13/15 12:40

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	57.2	50.0	114	70-135	

Lab Batch #: 970341 **Sample:** 693927-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/13/15 05:49

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	56.4	50.0	113	70-135	

Lab Batch #: 970341 **Sample:** 693927-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/13/15 06:11

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	59.7	50.0	119	70-135	

Lab Batch #: 970341 **Sample:** 693927-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/13/15 06:32

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	64.5	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.

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Orders : 509511,

Project ID: SRS#2013-044

Lab Batch #: 970341 **Sample:** 509511-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/13/15 11:50

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	99.7	127	70-135	
o-Terphenyl	63.9	49.9	128	70-135	

Lab Batch #: 970341 **Sample:** 509511-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/13/15 12:15

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY 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	

* 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.

Version: 1.%

BS / BSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 509511 **Project ID:** SRS#2013-044

Analyst: ARM **Date Prepared:** 06/12/2015 **Date Analyzed:** 06/13/2015

Lab Batch ID: 970341 **Sample:** 693927-1-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	849	85	1000	905	91	6	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	907	91	1000	983	98	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

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order # : 509511 **Project ID:** SRS#2013-044

Lab Batch ID: 970341 **QC- Sample ID:** 509511-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/13/2015 **Date Prepared:** 06/12/2015 **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	<16.6	1110	1080	97	1110	1160	105	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<16.6	1110	1120	101	1110	1210	109	8	70-135	35	

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

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

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

Laboratories

Sample Duplicate Recovery

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 509511

Lab Batch #: 970226 **Project ID:** SRS#2013-044

Date Analyzed: 06/12/2015 17:30 **Date Prepared:** 06/12/2015 **Analyst:** WRU

QC- Sample ID: 509471-007 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	23.6	20.7	13	20	

Lab Batch #: 970226

Date Analyzed: 06/12/2015 17:30 **Date Prepared:** 06/12/2015 **Analyst:** WRU

QC- Sample ID: 509472-001 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	14.3	17.1	18	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

Version: 1.%

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 06/11/2015 03:05:00 PM

Work Order #: 509511

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)?	6
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: 06/12/2015

Checklist reviewed by: Kelsey Brooks Date: 06/12/2015

CHAIN OF CUSTODY RECORD

XENCO Laboratories — Environmental Asbestos Radiochemistry

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

;roool-c

Page 1 of 1

LAB W.O#: 509511

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 J. Arguijo	Email:	bjarguijo@basinenv.com
Project ID:	Palladium 7-1 4-Inch Poly SRS #: 2013-044	PO#:	PAA-C. Bryant
Invoice To:	Camille Bryant Plains All American	Quote #:	
Sampler Name:	Steve Taylor	Circle One Event:	Daily Weekly Monthly Quartely Semi-Annual Annual N/A

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

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

ANALYSES REQUESTED

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Cont Type * VC	Pres Type**	Example Volatiles by 8260	TPH	BTEX								Hold Sample (CALL) Run PAH on Highest TPH Only if
								# Cont	Lab Only:		GC	GC								
1	#1b @ 9'	6/10/15	1100	S			1				X	HOLD								
2	#3b @ 9'	6/10/15	1150	S			1				X									
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

* Container Type Codes

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

Other _____

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

** Preservative Type Codes

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

^ Matrix Type Codes

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

Other _____

REMARKS

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

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	Steve Taylor					Basin Env	6/11/15	1500
2		Basin Env.	6/11/15	1130		XENCO	6/11/15	1458
3	Brad Woolley	Basin	6-11-15	1505		XENCO	6/11/15	1505
4								

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

C.O.C. Serial #

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 06/11/2015 03:05:00 PM

Work Order #: 509511

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)?	6
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: 06/12/2015

Checklist reviewed by: Kelsey Brooks Date: 06/12/2015

Analytical Report 509808

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Palladium 7-1 4-Inch Poly

SRS#2013-044

30-JUN-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

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

30-JUN-15

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

Reference: XENCO Report No(s): **509808**
Palladium 7-1 4-Inch Poly
Project Address:

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) 509808. 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. 509808 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 509808

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TT-1 @ 28'	S	06-15-15 14:00	- 28 ft	509808-001
TT-1 @ 30'	S	06-15-15 14:30	- 30 ft	509808-002
#8b @ 9'	S	06-15-15 10:45	- 9 ft	509808-003

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Palladium 7-1 4-Inch Poly

Project ID:	*SRS#2013-044*	Report Date:	*30-JUN-15*
Work Order Number(s):	*509808*	Date Received:	*06/17/2015*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Hits Summary 509808

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id : **TT-1 @ 28'**
Lab Sample Id : 509808-001
Sample Depth : 28 ft

Matrix : Soil
Date Collected : 06.15.15 14.00
Date Received : 06.17.15 13.50

% Moisture : 7.89
Basis : Dry Weight

Analytical Method : TPH by SW8015 Mod
Seq Number 970762

Prep Method: TX1005P
Date Prep: 06.19.15 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C12 Gasoline Range Hydrocarbons	PHC612	7850	mg/kg	06.20.15 22.51		5
C12-C28 Diesel Range Hydrocarbons	PHCG1028	12800	mg/kg	06.20.15 22.51		5
C28-C35 Oil Range Hydrocarbons	PHCG2835	542	mg/kg	06.20.15 22.51		5
Total TPH	PHC635	21200	mg/kg	06.20.15 22.51		5

Sample Id : **TT-1 @ 30'**
Lab Sample Id : 509808-002
Sample Depth : 30 ft

Matrix : Soil
Date Collected : 06.15.15 14.30
Date Received : 06.17.15 13.50

% Moisture : 10.73
Basis : Dry Weight

Analytical Method : TPH by SW8015 Mod
Seq Number 970762

Prep Method: TX1005P
Date Prep: 06.19.15 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C12 Gasoline Range Hydrocarbons	PHC612	4720	mg/kg	06.20.15 23.12		5
C12-C28 Diesel Range Hydrocarbons	PHCG1028	9790	mg/kg	06.20.15 23.12		5
C28-C35 Oil Range Hydrocarbons	PHCG2835	387	mg/kg	06.20.15 23.12		5
Total TPH	PHC635	14900	mg/kg	06.20.15 23.12		5

Sample Id : **#8b @ 9'**
Lab Sample Id : 509808-003
Sample Depth : 9 ft

Matrix : Soil
Date Collected : 06.15.15 10.45
Date Received : 06.17.15 13.50

% Moisture : 10.05
Basis : Dry Weight

Analytical Method : TPH by SW8015 Mod
Seq Number 970993

Prep Method: TX1005P
Date Prep: 06.24.15 11.09

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C12-C28 Diesel Range Hydrocarbons	PHCG1028	39.7	mg/kg	06.24.15 14.51		1
Total TPH	PHC635	39.7	mg/kg	06.24.15 14.51		1

Certificate of Analysis Summary 509808

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Palladium 7-1 4-Inch Poly

Project Id: SRS#2013-044
Contact: Ben Arguijo
Project Location:

Date Received in Lab: Wed Jun-17-15 01:50 pm
Report Date: 30-JUN-15
Project Manager: Kelsey Brooks

Analysis Requested											
	Lab Id:	509808-001		509808-002		509808-003					
	Field Id:	TT-1 @ 28'		TT-1 @ 30'		#8b @ 9'					
	Depth:	28 ft		30 ft		9 ft					
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	Jun-15-15 14:00		Jun-15-15 14:30		Jun-15-15 10:45					
BTEX by EPA 8021	Extracted:					Jun-29-15 12:00					
	Analyzed:					Jun-29-15 22:10					
	Units/RL:										
Xylenes, Total						ND	0.000992				
Total BTEX						ND	0.000992				
BTEX by EPA 8021	Extracted:					Jun-29-15 12:00					
	Analyzed:					Jun-29-15 22:10					
	Units/RL:					mg/kg	RL				
Benzene						ND	0.000992				
Toluene						ND	0.00198				
Ethylbenzene						ND	0.000992				
m_p-Xylenes						ND	0.00198				
o-Xylene						ND	0.000992				
Percent Moisture	Extracted:										
	Analyzed:	Jun-22-15 15:20		Jun-22-15 15:20		Jun-22-15 16:40					
	Units/RL:	%	RL	%	RL	%	RL				
Percent Moisture		7.89	1.00	10.7	1.00	10.1	1.00				
TPH by SW8015 Mod	Extracted:	Jun-19-15 11:00		Jun-19-15 11:00		Jun-24-15 11:09					
	Analyzed:	Jun-20-15 22:51		Jun-20-15 23:12		Jun-24-15 14:51					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		7850	81.3	4720	83.8	ND	16.7				
C12-C28 Diesel Range Hydrocarbons		12800	81.3	9790	83.8	39.7	16.7				
C28-C35 Oil Range Hydrocarbons		542	81.3	387	83.8	ND	16.7				
Total TPH		21200	81.3	14900	83.8	39.7	16.7				

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: Palladium 7-1 4-Inch Poly

Work Orders : 509808, 509808 **Project ID:** SRS#2013-044

Lab Batch #: 970762 **Sample:** 509808-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/20/15 22:51

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.1	99.8	92	70-135	
o-Terphenyl	59.9	49.9	120	70-135	

Lab Batch #: 970762 **Sample:** 509808-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/20/15 23:12

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.0	99.8	75	70-135	
o-Terphenyl	63.6	49.9	127	70-135	

Lab Batch #: 970993 **Sample:** 509808-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/24/15 14:51

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	51.4	50.0	103	70-135	

Lab Batch #: 971291 **Sample:** 509808-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/15 22:10

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0337	0.0300	112	80-120	

Lab Batch #: 970762 **Sample:** 694190-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/20/15 13:45

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	63.1	50.0	126	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Orders : 509808, 509808 **Project ID:** SRS#2013-044

Lab Batch #: 970993 **Sample:** 694345-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/24/15 12:07

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	54.9	50.0	110	70-135	

Lab Batch #: 971291 **Sample:** 694408-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/29/15 18:41

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 970762 **Sample:** 694190-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/20/15 14:10

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	51.7	50.0	103	70-135	

Lab Batch #: 970993 **Sample:** 694345-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/24/15 13:01

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	58.1	50.0	116	70-135	

Lab Batch #: 971291 **Sample:** 694408-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/29/15 18:57

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Orders : 509808, 509808 **Project ID:** SRS#2013-044

Lab Batch #: 970762 **Sample:** 694190-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/20/15 14:35

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	53.5	50.0	107	70-135	

Lab Batch #: 970993 **Sample:** 694345-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/24/15 17:03

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	53.4	50.0	107	70-135	

Lab Batch #: 971291 **Sample:** 694408-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/29/15 20:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

Lab Batch #: 970762 **Sample:** 509732-004 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/20/15 15:48

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	99.7	113	70-135	
o-Terphenyl	49.6	49.9	99	70-135	

Lab Batch #: 970993 **Sample:** 509808-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/24/15 15:43

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	99.9	130	70-135	
o-Terphenyl	60.9	50.0	122	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: Palladium 7-1 4-Inch Poly

Work Orders : 509808, 509808 **Project ID:** SRS#2013-044

Lab Batch #: 971291 **Sample:** 510179-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/15 20:31

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0339	0.0300	113	80-120	

Lab Batch #: 970993 **Sample:** 509808-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/24/15 16:10

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.7	128	70-135	
o-Terphenyl	57.5	49.9	115	70-135	

Lab Batch #: 971291 **Sample:** 510179-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/15 20:47

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0343	0.0300	114	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 509808, 509808 **Project ID:** SRS#2013-044

Analyst: ARM **Date Prepared:** 06/29/2015 **Date Analyzed:** 06/29/2015

Lab Batch ID: 971291 **Sample:** 694408-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0899	90	0.100	0.0901	90	0	70-130	35	
Toluene	<0.00200	0.100	0.0894	89	0.100	0.0895	90	0	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0896	90	0.100	0.0904	90	1	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.183	92	0.200	0.184	92	1	70-135	35	
o-Xylene	<0.00100	0.100	0.0944	94	0.100	0.0939	94	1	71-133	35	

Analyst: ARM **Date Prepared:** 06/19/2015 **Date Analyzed:** 06/20/2015

Lab Batch ID: 970762 **Sample:** 694190-1-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	979	98	1000	994	99	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1010	101	1000	1020	102	1	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: Palladium 7-1 4-Inch Poly

Work Order #: 509808, 509808 **Project ID:** SRS#2013-044

Analyst: PJB **Date Prepared:** 06/24/2015 **Date Analyzed:** 06/24/2015

Lab Batch ID: 970993 **Sample:** 694345-1-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	840	84	1000	931	93	10	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1050	105	1000	1140	114	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

Form 3 - MS Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 509808

Lab Batch #: 970762 **Project ID:** SRS#2013-044

Date Analyzed: 06/20/2015 **Date Prepared:** 06/19/2015 **Analyst:** ARM

QC- Sample ID: 509732-004 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	<17.1	1140	1060	93	70-135	
C12-C28 Diesel Range Hydrocarbons	<17.1	1140	1060	93	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: Palladium 7-1 4-Inch Poly

Work Order # : 509808 **Project ID:** SRS#2013-044

Lab Batch ID: 971291 **QC- Sample ID:** 510179-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/29/2015 **Date Prepared:** 06/29/2015 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00108	0.108	0.0699	65	0.108	0.0667	62	5	70-130	35	X
Toluene	<0.00215	0.108	0.0583	54	0.108	0.0602	56	3	70-130	35	X
Ethylbenzene	<0.00108	0.108	0.0556	51	0.108	0.0575	53	3	71-129	35	X
m_p-Xylenes	<0.00215	0.215	0.102	47	0.216	0.111	51	8	70-135	35	X
o-Xylene	<0.00108	0.108	0.0658	61	0.108	0.0646	60	2	71-133	35	X

Lab Batch ID: 970993 **QC- Sample ID:** 509808-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/24/2015 **Date Prepared:** 06/24/2015 **Analyst:** PJB

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	<16.7	1110	1050	95	1110	978	88	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	39.7	1110	1240	108	1110	1220	106	2	70-135	35	

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

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

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

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

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

Laboratories

Sample Duplicate Recovery

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 509808

Lab Batch #: 970850 **Project ID:** SRS#2013-044
Date Analyzed: 06/22/2015 15:20 **Date Prepared:** 06/22/2015 **Analyst:** WRU
QC- Sample ID: 509574-016 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	21.6	21.5	0	20	

Lab Batch #: 970850
Date Analyzed: 06/22/2015 15:20 **Date Prepared:** 06/22/2015 **Analyst:** WRU
QC- Sample ID: 509732-013 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	14.5	14.4	1	20	

Lab Batch #: 970853
Date Analyzed: 06/22/2015 16:40 **Date Prepared:** 06/22/2015 **Analyst:** WRU
QC- Sample ID: 509628-010 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	16.1	14.6	10	20	

Lab Batch #: 970853
Date Analyzed: 06/22/2015 16:40 **Date Prepared:** 06/22/2015 **Analyst:** WRU
QC- Sample ID: 509808-003 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	10.1	9.95	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

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 06/17/2015 01:50:00 PM

Work Order #: 509808

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	0
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: 06/17/2015

Checklist reviewed by: Kelsey Brooks Date: 06/17/2015

CHAIN OF CUSTODY RECORD

XENCO Laboratories — Environmental · Asbestos · Radiochemistry

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

;roool-c

Page 1 of 1

LAB W.O#: 500808

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 J. Arguijo	Email:	bjarguijo@basinenv.com
Project ID:	Palladium 7-1 4-Inch Poly SRS #: 2013-044	PO#:	PAA-C. Bryant
Invoice To:	Camille Bryant Plains All American	Quote #:	
Sampler Name:	Cameron Fisher	Circle One Event:	Daily Weekly Monthly Quarterly Semi-Annual Annual N/A

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

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

ANALYSES REQUESTED

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	Cont Type * VC	Pres Type**	Example Volatiles by 8260	TPH	BTEX								Hold Sample (CALL___) Run PAH Only if on Highest TPH___
								GC	GC											
								I	I											
								# Cont	Lab Only:											
1	TT-1 @ 28'	6/15/2015	1400	S			1				X	HOLD								
2	TT-1 @ 30'	6/15/2015	1430	S			1				X									
3	~~Ho #196 #76~~ @ 9'	6/15/2015	1045	S			1				X									
4																				
5																				
6																				
7																				
8																				
9																				
10																				

* Container Type Codes

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

Other _____

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

** Preservative Type Codes

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

^ Matrix Type Codes

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

Other _____

REMARKS

Reg. Program / Clean-up Std	STATE for Certs & Regs	QA/QC Level & Certification	EDDs	COC & Labels	Coolers Temp °C
...s TRRP DW NPDES LPST DryCln ...er:	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 10 2 3 0

Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
Cameron Fisher	Basin Env	6-15-15	17:00		Basin Env	6/15/15	1700
	Basin Env.	6/16/15	1255		Basin	6/16/15	1255
	Basin	6/16/15	1:51		mail services	6/16/15	13:5
					XENCO	6/17/15	13:50

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 #

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

E...ution 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 a...st 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. Revision Date: Nov 12, 2009

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 06/17/2015 01:50:00 PM

Work Order #: 509808

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	0
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: 06/17/2015

Checklist reviewed by: Kelsey Brooks Date: 06/17/2015

Analytical Report 510038

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Palladium 7-1 4-Inch Poly

SRS#2013-044

24-JUN-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-18), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

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

24-JUN-15

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

Reference: XENCO Report No(s): **510038**
Palladium 7-1 4-Inch Poly
Project Address:

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) 510038. 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. 510038 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 510038

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
#5b @ 9'	S	06-18-15 14:30	- 9 ft	510038-001

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Palladium 7-1 4-Inch Poly

Project ID:	*SRS#2013-044*	Report Date:	*24-JUN-15*
Work Order Number(s):	*510038*	Date Received:	*06/19/2015*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Hits Summary 510038

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id : **#5b @ 9'**
Lab Sample Id : 510038-001
Sample Depth : 9 ft

Matrix : Soil
Date Collected : 06.18.15 14.30
Date Received : 06.19.15 15.30

% Moisture : 9.66
Basis : Dry Weight

Analytical Method : TPH by SW8015 Mod
Seq Number 970861

Prep Method: TX1005P
Date Prep: 06.22.15 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C12 Gasoline Range Hydrocarbons	PHC612	1010	mg/kg	06.23.15 11.50		5
C12-C28 Diesel Range Hydrocarbons	PHCG1028	4620	mg/kg	06.23.15 11.50		5
C28-C35 Oil Range Hydrocarbons	PHCG2835	1020	mg/kg	06.23.15 11.50		5
Total TPH	PHC635	6650	mg/kg	06.23.15 11.50		5

Certificate of Analysis Summary 510038

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Palladium 7-1 4-Inch Poly

Project Id: SRS#2013-044
Contact: Ben Arguijo
Project Location:

Date Received in Lab: Fri Jun-19-15 03:30 pm
Report Date: 24-JUN-15
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	510038-001					
	Field Id:	#5b @ 9'					
	Depth:	9 ft					
	Matrix:	SOIL					
	Sampled:	Jun-18-15 14:30					
Percent Moisture	***Extracted:***						
	Analyzed:	Jun-22-15 16:40					
	Units/RL:	%	RL				
Percent Moisture		9.66	1.00				
TPH by SW8015 Mod	***Extracted:***	Jun-22-15 15:00					
	Analyzed:	Jun-23-15 11:50					
	Units/RL:	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		1010	82.8				
C12-C28 Diesel Range Hydrocarbons		4620	82.8				
C28-C35 Oil Range Hydrocarbons		1020	82.8				
Total TPH		6650	82.8				

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 **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: Palladium 7-1 4-Inch Poly

Work Orders : 510038, 510038 **Project ID:** SRS#2013-044

Lab Batch #: 970861 **Sample:** 510038-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/23/15 11:50

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	99.7	130	70-135	
o-Terphenyl	59.7	49.9	120	70-135	

Lab Batch #: 970861 **Sample:** 694228-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/22/15 17:22

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	64.7	50.0	129	70-135	

Lab Batch #: 970861 **Sample:** 694228-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/22/15 17:46

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	51.9	50.0	104	70-135	

Lab Batch #: 970861 **Sample:** 694228-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/22/15 18:09

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	53.4	50.0	107	70-135	

Lab Batch #: 970861 **Sample:** 510048-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/22/15 18:55

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	132	99.8	132	70-135	
o-Terphenyl	56.8	49.9	114	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: Palladium 7-1 4-Inch Poly

Work Orders : 510038, 510038 **Project ID:** SRS#2013-044

Lab Batch #: 970861 **Sample:** 510048-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/22/15 19:18

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

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

BS / BSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 510038, 510038 **Project ID:** SRS#2013-044

Analyst: PJB **Date Prepared:** 06/22/2015 **Date Analyzed:** 06/22/2015

Lab Batch ID: 970861 **Sample:** 694228-1-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	785	79	1000	785	79	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	975	98	1000	978	98	0	70-135	35	

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

Form 3 - MS / MSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order # : 510038 **Project ID:** SRS#2013-044

Lab Batch ID: 970861 **QC- Sample ID:** 510048-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/22/2015 **Date Prepared:** 06/22/2015 **Analyst:** PJB

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	<19.3	1290	1150	89	1290	1190	92	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<19.3	1290	1440	112	1290	1500	116	4	70-135	35	

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

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

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

Laboratories

Sample Duplicate Recovery

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 510038

Lab Batch #: 970853 **Project ID:** SRS#2013-044

Date Analyzed: 06/22/2015 16:40 **Date Prepared:** 06/22/2015 **Analyst:** WRU

QC- Sample ID: 509628-010 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	16.1	14.6	10	20	

Lab Batch #: 970853

Date Analyzed: 06/22/2015 16:40 **Date Prepared:** 06/22/2015 **Analyst:** WRU

QC- Sample ID: 509808-003 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	10.1	9.95	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

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 06/19/2015 03:30:00 PM

Work Order #: 510038

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: Julian Martinez Date: 06/22/2015

Checklist reviewed by: Julian Martinez Date: 06/22/2015

CHAIN OF CUSTODY RECORD

XENCO Laboratories — Environmental Asbestos Radiochemistry

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

;roool-c

Page 1 of 1

LAB W.O#: 510038

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:	Palladium 7-1 4-Inch Poly SRS #2013-044	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	Pres Type**	Example Volatiles by 8260	GC TPH	GC BTEX	Hold Sample (CALL___) on Highest TPH	Run PAH Only
								# Cont	Lab Only:					
1	NMB #6b @ 9' 115b	6/18/2015	1430	S							X			
2														
3														
4														
5														
6														
7														
8														
9														
10														

* Container Type Codes

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

Other _____

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

** Preservative Type Codes

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

^ Matrix Type Codes

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

Other _____

REMARKS

Run BTEX if TPH <= 5,000 mg/kg

Reg. Program / Clean-up Std	STATE for Certs & Regs	QA/QC Level & Certification	EDDs	COC & Labels	Coolers Temp °C	Lab Use Only
PSTs 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	19.8 2203	YES NO N/A

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1		Basin Envi.	6/18/15	1627	Misty Lemons	Mail Service	6/18/15	1628
2						Xenco	6/18-15	15:30
3								
4								

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

C.O.C. Serial #

 Revision Date: Nov 12, 2009

Samples brought in straight from field

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 06/19/2015 03:30:00 PM

Work Order #: 510038

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: Julian Martinez Date: 06/22/2015

Checklist reviewed by: Julian Martinez Date: 06/22/2015

Analytical Report 511604

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Palladium 7-1 4-Inch Poly

SRS#2013-044

16-JUL-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

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

16-JUL-15

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

Reference: XENCO Report No(s): **511604**
Palladium 7-1 4-Inch Poly
Project Address:

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) 511604. 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. 511604 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 511604

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TT-2 @ 2'	S	07-13-15 09:00	- 2 ft	511604-001
TT-2 @ 6'	S	07-13-15 09:10	- 6 ft	511604-002
TT-2 @ 10'	S	07-13-15 09:20	- 10 ft	511604-003
TT-2 @ 12'	S	07-13-15 09:25	- 12 ft	511604-004
TT-2 @ 14'	S	07-13-15 09:30	- 14 ft	511604-005

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Palladium 7-1 4-Inch Poly

Project ID:	*SRS#2013-044*	Report Date:	*16-JUL-15*
Work Order Number(s):	*511604*	Date Received:	*07/15/2015*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Hits Summary 511604

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Certificate of Analysis Summary 511604

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Palladium 7-1 4-Inch Poly

Project Id: SRS#2013-044
Contact: Ben Arguijo
Project Location:

Date Received in Lab: Wed Jul-15-15 03:57 pm
Report Date: 16-JUL-15
Project Manager: Kelsey Brooks

Analysis Requested															
	Lab Id:	511604-001		511604-002		511604-003		511604-004		511604-005					
	Field Id:	TT-2 @ 2'		TT-2 @ 6'		TT-2 @ 10'		TT-2 @ 12'		TT-2 @ 14'					
	Depth:	2 ft		6 ft		10 ft		12 ft		14 ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL					
	Sampled:	Jul-13-15 09:00		Jul-13-15 09:10		Jul-13-15 09:20		Jul-13-15 09:25		Jul-13-15 09:30					
Percent Moisture	*Extracted:*														
	Analyzed:	Jul-15-15 17:30		Jul-15-15 17:30		Jul-15-15 17:30		Jul-15-15 17:30		Jul-15-15 17:30					
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL				
Percent Moisture		4.75	1.00	12.4	1.00	12.7	1.00	9.67	1.00	12.2	1.00				
TPH by SW8015 Mod	*Extracted:*	Jul-15-15 18:00		Jul-15-15 18:00		Jul-15-15 18:00		Jul-15-15 18:00		Jul-15-15 18:00					
	Analyzed:	Jul-15-15 22:12		Jul-15-15 22:39		Jul-15-15 23:03		Jul-15-15 23:26		Jul-16-15 14:50					
	Units/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	17.1	ND	17.2	ND	16.5	ND	17.0				
C12-C28 Diesel Range Hydrocarbons		ND	15.7	ND	17.1	ND	17.2	ND	16.5	ND	17.0				
C28-C35 Oil Range Hydrocarbons		ND	15.7	ND	17.1	ND	17.2	ND	16.5	ND	17.0				
Total TPH		ND	15.7	ND	17.1	ND	17.2	ND	16.5	ND	17.0				

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 **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: Palladium 7-1 4-Inch Poly

Work Orders : 511604,

Project ID: SRS#2013-044

Lab Batch #: 972449 **Sample:** 511604-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/15/15 22:12

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	99.7	130	70-135	
o-Terphenyl	63.5	49.9	127	70-135	

Lab Batch #: 972449 **Sample:** 511604-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/15/15 22:39

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.9	111	70-135	
o-Terphenyl	53.9	50.0	108	70-135	

Lab Batch #: 972449 **Sample:** 511604-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/15/15 23:03

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	60.2	50.0	120	70-135	

Lab Batch #: 972449 **Sample:** 511604-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/15/15 23:26

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.6	119	70-135	
o-Terphenyl	58.1	49.8	117	70-135	

Lab Batch #: 972449 **Sample:** 511604-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/16/15 14:50

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	99.7	130	70-135	
o-Terphenyl	63.7	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: Palladium 7-1 4-Inch Poly

Work Orders : 511604,

Project ID: SRS#2013-044

Lab Batch #: 972449 **Sample:** 695250-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/15/15 21:02

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	53.6	50.0	107	70-135	

Lab Batch #: 972449 **Sample:** 695250-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/15/15 21:25

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	52.1	50.0	104	70-135	

Lab Batch #: 972449 **Sample:** 695250-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/15/15 21:48

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	56.3	50.0	113	70-135	

Lab Batch #: 972449 **Sample:** 511243-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/16/15 06:12

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.6	109	70-135	
o-Terphenyl	46.9	49.8	94	70-135	

Lab Batch #: 972449 **Sample:** 511243-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/16/15 06:37

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	99.9	123	70-135	
o-Terphenyl	52.3	50.0	105	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 511604 **Project ID:** SRS#2013-044

Analyst: PJB **Date Prepared:** 07/15/2015 **Date Analyzed:** 07/15/2015

Lab Batch ID: 972449 **Sample:** 695250-1-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	760	76	1000	847	85	11	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	857	86	1000	941	94	9	70-135	35	

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

Form 3 - MS / MSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order # : 511604 **Project ID:** SRS#2013-044

Lab Batch ID: 972449 **QC- Sample ID:** 511243-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/16/2015 **Date Prepared:** 07/15/2015 **Analyst:** PJB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.3	1020	760	75	1020	791	78	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.3	1020	861	84	1020	894	88	4	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.

Laboratories

Sample Duplicate Recovery

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 511604

Lab Batch #: 972402 **Project ID:** SRS#2013-044

Date Analyzed: 07/15/2015 17:30 **Date Prepared:** 07/15/2015 **Analyst:** WRU

QC- Sample ID: 511593-001 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	9.59	9.12	5	20	

Lab Batch #: 972402

Date Analyzed: 07/15/2015 17:30 **Date Prepared:** 07/15/2015 **Analyst:** WRU

QC- Sample ID: 511604-005 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	12.2	12.0	2	20	

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 07/15/2015 03:57:00 PM

Work Order #: 511604

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: 07/15/2015

Checklist reviewed by: Kelsey Brooks Date: 07/15/2015

CHAIN OF CUSTODY RECORD

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

Page 1 of 1

LAB W.O#: 511604

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 J. Arguijo	Email:	bjarguijo@basinenv.com
Project ID:	Palladium 7-1 4-Inch Poly SRS #: 2013-044	PO#:	PAA-C. Bryant
Invoice To:	Camille Bryant Plains All American	Quote #:	
Sampler Name:	Steve Taylor	Circle One Event:	Daily Weekly Monthly Quarterly Semi-Annual Annual N/A

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

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

ANALYSES REQUESTED

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code ^	Field Filtered	Integrity OK (Y/N)	Total # of containers	# Cont	Example Volatiles by 8260	TPH	BTEX								Hold Sample (CALL) Run PAH on Highest TPH Only if
								Cont Type * VC		GC	GC								
								Pres Type**		I	I								
								Lab Only:											
1	TT-2 @ 2'	7/13/2015	0900	S			1			X	HOLD								
2	TT-2 @ 6'	7/13/2015	0910	S			1			X									
3	TT-2 @ 10'	7/13/2015	0920	S			1			X									
4	TT-2 @ 12'	7/13/2015	0925	S			1			X									
5	TT-2 @ 14'	7/13/2015	0930	S			1			X									
6																			
7																			
8																			
9																			
10																			

* Container Type Codes

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

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

** Preservative Type Codes

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

^ Matrix Type Codes

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

REMARKS

Reg. Program / Clean-up Std	STATE for Certs & Regs	QA/QC Level & Certification	EDDs	COC & Labels	Coolers Temp °C
TCLs TRRP DW NPDES LPST DryCln Other:	FL TX GA NC SC NJ PA OK LA AL NM Other:	1 2 3 4 CLP AFCEE QAPP NELAC DoD-ELAP Other:	ADaPT SEDD ERPIMS XLS Other:	Match Incomplete Absent Unclear	1 2 3 5

	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	Steve Taylor	Basin Env.	7/13/2015	1700		Basin Env.	7/13/2015	1700
2		Basin Env.	7/15/2015	0730		Basin	7/15/15	0730
3		Basin	7/15/15	1600		Xenco	7/15/15	1557
4								

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

C.O.C. Serial #

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 07/15/2015 03:57:00 PM

Work Order #: 511604

Acceptable Temperature Range: 0 - 6 degC
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#1 *Temperature of cooler(s)?	5
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#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: 07/15/2015

Checklist reviewed by: Kelsey Brooks Date: 07/15/2015

Analytical Report 518681

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Palladium 7-1 4-Inch Poly

SRS#2013-044

11-NOV-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

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

11-NOV-15

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

Reference: XENCO Report No(s): **518681**
Palladium 7-1 4-Inch Poly
Project Address:

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) 518681. 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. 518681 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 518681

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-1 @ 30'	S	10-28-15 10:20	- 30 ft	518681-001
SB-1 @ 50'	S	10-28-15 11:03	- 50 ft	518681-002
SB-1 @ 80'	S	10-28-15 11:23	- 80 ft	518681-003
SB-1 @ 105'	S	10-28-15 12:01	- 105 ft	518681-004
SB-1 @ 135'	S	10-28-15 13:16	- 135 ft	518681-005
SB-1 @ 140'	S	10-28-15 13:20	- 140 ft	518681-006

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Palladium 7-1 4-Inch Poly

Project ID:	*SRS#2013-044*	Report Date:	*11-NOV-15*
Work Order Number(s):	*518681*	Date Received:	*11/03/2015*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Hits Summary 518681

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id : **SB-1 @ 30'**
Lab Sample Id : 518681-001
Sample Depth : 30 ft

Matrix : Soil
Date Collected : 10.28.15 10.20
Date Received : 11.03.15 14.45

% Moisture :
Basis : Wet Weight

Analytical Method : BTEX by EPA 8021
Seq Number 981002

Prep Method: SW5030B
Date Prep: 11.09.15 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Toluene	108-88-3	3.80	mg/kg	11.10.15 11.50		25
Ethylbenzene	100-41-4	3.64	mg/kg	11.10.15 11.50		25
m_p-Xylenes	179601-23-1	15.5	mg/kg	11.10.15 11.50		25
o-Xylene	95-47-6	5.51	mg/kg	11.10.15 11.50		25
Xylenes, Total	1330-20-7	21.0	mg/kg	11.10.15 11.50		25
Total BTEX		28.5	mg/kg	11.10.15 11.50		25

Analytical Method : TPH by SW8015 Mod
Seq Number 980771

Prep Method: TX1005P
Date Prep: 11.04.15 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	412	mg/kg	11.04.15 14.46		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	2270	mg/kg	11.04.15 14.46		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	220	mg/kg	11.04.15 14.46		1
Total TPH	PHC635	2900	mg/kg	11.04.15 14.46		1

Hits Summary 518681

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id : **SB-1 @ 50'**
Lab Sample Id : 518681-002
Sample Depth : 50 ft

Matrix : Soil
Date Collected : 10.28.15 11.03
Date Received : 11.03.15 14.45

% Moisture :
Basis : Wet Weight

Analytical Method : BTEX by EPA 8021
Seq Number 981002

Prep Method: SW5030B
Date Prep: 11.09.15 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0107	mg/kg	11.10.15 09.27		5
Toluene	108-88-3	0.0190	mg/kg	11.10.15 09.27		5
Ethylbenzene	100-41-4	0.00744	mg/kg	11.10.15 09.27		5
m_p-Xylenes	179601-23-1	0.102	mg/kg	11.10.15 09.27		5
o-Xylene	95-47-6	0.0310	mg/kg	11.10.15 09.27		5
Xylenes, Total	1330-20-7	0.133	mg/kg	11.10.15 09.27		5
Total BTEX		0.170	mg/kg	11.10.15 09.27		5

Analytical Method : TPH by SW8015 Mod
Seq Number 980771

Prep Method: TX1005P
Date Prep: 11.04.15 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	19.0	mg/kg	11.04.15 15.15		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	321	mg/kg	11.04.15 15.15		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	42.3	mg/kg	11.04.15 15.15		1
Total TPH	PHC635	382	mg/kg	11.04.15 15.15		1

Hits Summary 518681

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id : **SB-1 @ 80'**
Lab Sample Id : 518681-003
Sample Depth : 80 ft

Matrix : Soil
Date Collected : 10.28.15 11.23
Date Received : 11.03.15 14.45

% Moisture :
Basis : Wet Weight

Analytical Method : BTEX by EPA 8021
Seq Number 981002

Prep Method: SW5030B
Date Prep: 11.09.15 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00126	mg/kg	11.10.15 02.50		1
Toluene	108-88-3	0.00378	mg/kg	11.10.15 02.50		1
Ethylbenzene	100-41-4	0.0153	mg/kg	11.10.15 02.50		1
m_p-Xylenes	179601-23-1	0.0920	mg/kg	11.10.15 02.50		1
o-Xylene	95-47-6	0.0496	mg/kg	11.10.15 02.50		1
Xylenes, Total	1330-20-7	0.142	mg/kg	11.10.15 02.50		1
Total BTEX		0.162	mg/kg	11.10.15 02.50		1

Analytical Method : TPH by SW8015 Mod
Seq Number 980771

Prep Method: TX1005P
Date Prep: 11.04.15 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	24.2	mg/kg	11.04.15 15.45		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	283	mg/kg	11.04.15 15.45		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	35.7	mg/kg	11.04.15 15.45		1
Total TPH	PHC635	343	mg/kg	11.04.15 15.45		1

Sample Id : **SB-1 @ 105'**
Lab Sample Id : 518681-004
Sample Depth : 105 ft

Matrix : Soil
Date Collected : 10.28.15 12.01
Date Received : 11.03.15 14.45

% Moisture :
Basis : Wet Weight

Analytical Method : TPH by SW8015 Mod
Seq Number 980771

Prep Method: TX1005P
Date Prep: 11.04.15 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	178	mg/kg	11.04.15 16.17		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	25.1	mg/kg	11.04.15 16.17		1
Total TPH	PHC635	203	mg/kg	11.04.15 16.17		1

Hits Summary 518681

PLAINS ALL AMERICAN EH&S, Midland, TX

Palladium 7-1 4-Inch Poly

Sample Id : **SB-1 @ 135'**
Lab Sample Id : 518681-005
Sample Depth : 135 ft

Matrix : Soil
Date Collected : 10.28.15 13.16
Date Received : 11.03.15 14.45

% Moisture :
Basis : Wet Weight

Analytical Method : TPH by SW8015 Mod
Seq Number 980771

Prep Method: TX1005P
Date Prep: 11.04.15 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	17.3	mg/kg	11.05.15 11.00		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	277	mg/kg	11.05.15 11.00		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	34.9	mg/kg	11.05.15 11.00		1
Total TPH	PHC635	329	mg/kg	11.05.15 11.00		1

Sample Id : **SB-1 @ 140'**
Lab Sample Id : 518681-006
Sample Depth : 140 ft

Matrix : Soil
Date Collected : 10.28.15 13.20
Date Received : 11.03.15 14.45

% Moisture :
Basis : Wet Weight

Analytical Method : TPH by SW8015 Mod
Seq Number 980771

Prep Method: TX1005P
Date Prep: 11.04.15 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	133	mg/kg	11.05.15 11.36		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	17.5	mg/kg	11.05.15 11.36		1
Total TPH	PHC635	151	mg/kg	11.05.15 11.36		1

Certificate of Analysis Summary 518681

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Palladium 7-1 4-Inch Poly

Project Id: SRS#2013-044
Contact: Ben Arguijo
Project Location:

Date Received in Lab: Tue Nov-03-15 02:45 pm
Report Date: 11-NOV-15
Project Manager: Kelsey Brooks

Analysis Requested		Lab Id:	518681-001		518681-002		518681-003		518681-004		518681-005		518681-006	
		Field Id:	SB-1 @ 30'		SB-1 @ 50'		SB-1 @ 80'		SB-1 @ 105'		SB-1 @ 135'		SB-1 @ 140'	
		Depth:	30 ft		50 ft		80 ft		105 ft		135 ft		140 ft	
		Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
		Sampled:	Oct-28-15 10:20		Oct-28-15 11:03		Oct-28-15 11:23		Oct-28-15 12:01		Oct-28-15 13:16		Oct-28-15 13:20	
BTEX by EPA 8021		Extracted:	Nov-09-15 15:00		Nov-09-15 15:00		Nov-09-15 15:00		Nov-09-15 15:00		Nov-09-15 15:00		Nov-09-15 15:00	
		Analyzed:	Nov-10-15 11:50		Nov-10-15 09:27		Nov-10-15 02:50		Nov-10-15 03:06		Nov-10-15 03:23		Nov-10-15 03:40	
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene			ND	0.0253	0.0107	0.00503	0.00126	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Toluene			3.80	0.0505	0.0190	0.0101	0.00378	0.00201	ND	0.00200	ND	0.00200	ND	0.00200
Ethylbenzene			3.64	0.0253	0.00744	0.00503	0.0153	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
m_p-Xylenes			15.5	0.0505	0.102	0.0101	0.0920	0.00201	ND	0.00200	ND	0.00200	ND	0.00200
o-Xylene			5.51	0.0253	0.0310	0.00503	0.0496	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Xylenes, Total			21.0	0.0253	0.133	0.00503	0.142	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total BTEX			28.5	0.0253	0.170	0.00503	0.162	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
TPH by SW8015 Mod		Extracted:	Nov-04-15 13:00		Nov-04-15 13:00		Nov-04-15 13:00		Nov-04-15 13:00		Nov-04-15 13:00		Nov-04-15 13:00	
		Analyzed:	Nov-04-15 14:46		Nov-04-15 15:15		Nov-04-15 15:45		Nov-04-15 16:17		Nov-05-15 11:00		Nov-05-15 11:36	
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons			412	15.0	19.0	15.0	24.2	15.0	ND	14.9	17.3	15.0	ND	15.0
C10-C28 Diesel Range Hydrocarbons			2270	15.0	321	15.0	283	15.0	178	14.9	277	15.0	133	15.0
C28-C35 Oil Range Hydrocarbons			220	15.0	42.3	15.0	35.7	15.0	25.1	14.9	34.9	15.0	17.5	15.0
Total TPH			2900	15.0	382	15.0	343	15.0	203	14.9	329	15.0	151	15.0

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

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
6017 Financial Drive, Norcross, GA 30071	(770) 449-8800	(770) 449-5477
3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Orders : 518681,

Project ID: SRS#2013-044

Lab Batch #: 980771 **Sample:** 518681-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/04/15 14:46

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.9	99.9	97	70-135	
o-Terphenyl	42.2	50.0	84	70-135	

Lab Batch #: 980771 **Sample:** 518681-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/04/15 15:15

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.6	99.7	89	70-135	
o-Terphenyl	41.4	49.9	83	70-135	

Lab Batch #: 980771 **Sample:** 518681-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/04/15 15:45

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.9	105	70-135	
o-Terphenyl	48.6	50.0	97	70-135	

Lab Batch #: 980771 **Sample:** 518681-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/04/15 16:17

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.6	100	70-135	
o-Terphenyl	46.1	49.8	93	70-135	

Lab Batch #: 980771 **Sample:** 518681-005 / SMP **Batch:** 1 **Matrix:** Soil

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

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	99.7	117	70-135	
o-Terphenyl	53.7	49.9	108	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: Palladium 7-1 4-Inch Poly

Work Orders : 518681,

Project ID: SRS#2013-044

Lab Batch #: 980771 **Sample:** 518681-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/05/15 11:36

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	99.9	113	70-135	
o-Terphenyl	51.4	50.0	103	70-135	

Lab Batch #: 981002 **Sample:** 518681-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/10/15 02:50

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0318	0.0300	106	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

Lab Batch #: 981002 **Sample:** 518681-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/10/15 03:06

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 981002 **Sample:** 518681-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/10/15 03:23

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

Lab Batch #: 981002 **Sample:** 518681-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/10/15 03:40

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0308	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: Palladium 7-1 4-Inch Poly

Work Orders : 518681,

Project ID: SRS#2013-044

Lab Batch #: 981002 **Sample:** 518681-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/10/15 09:27

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 981002 **Sample:** 518681-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/10/15 11:50

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

Lab Batch #: 980771 **Sample:** 700524-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/05/15 13:57

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.0	100	98	70-135	
o-Terphenyl	44.4	50.0	89	70-135	

Lab Batch #: 981002 **Sample:** 700677-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/10/15 02:33

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0250	0.0300	83	80-120	

Lab Batch #: 980771 **Sample:** 700524-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/05/15 15:03

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	40.8	50.0	82	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: Palladium 7-1 4-Inch Poly

Work Orders : 518681,

Project ID: SRS#2013-044

Lab Batch #: 981002 **Sample:** 700677-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/10/15 01:46

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0358	0.0300	119	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 980771 **Sample:** 700524-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/05/15 18:48

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	46.7	50.0	93	70-135	

Lab Batch #: 981002 **Sample:** 700677-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/10/15 08:53

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0335	0.0300	112	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

Lab Batch #: 980771 **Sample:** 518684-006 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/06/15 03:52

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	49.8	50.0	100	70-135	

Lab Batch #: 981002 **Sample:** 518684-004 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/10/15 10:55

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0354	0.0300	118	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	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: Palladium 7-1 4-Inch Poly

Work Orders : 518681,

Project ID: SRS#2013-044

Lab Batch #: 980771 **Sample:** 518684-006 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/06/15 04:25

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	99.7	127	70-135	
o-Terphenyl	50.9	49.9	102	70-135	

Lab Batch #: 981002 **Sample:** 518684-004 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/10/15 11:12

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0282	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.

BS / BSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order #: 518681 **Project ID:** SRS#2013-044

Analyst: SYG **Date Prepared:** 11/09/2015 **Date Analyzed:** 11/10/2015

Lab Batch ID: 981002 **Sample:** 700677-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000996	0.0996	0.0883	89	0.0992	0.0933	94	6	70-130	35	
Toluene	<0.00199	0.0996	0.0904	91	0.0992	0.101	102	11	70-130	35	
Ethylbenzene	<0.000996	0.0996	0.0910	91	0.0992	0.111	112	20	71-129	35	
m_p-Xylenes	<0.00199	0.199	0.186	93	0.198	0.237	120	24	70-135	35	
o-Xylene	<0.000996	0.0996	0.0875	88	0.0992	0.118	119	30	71-133	35	

Analyst: PJB **Date Prepared:** 11/05/2015 **Date Analyzed:** 11/05/2015

Lab Batch ID: 980771 **Sample:** 700524-1-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-C10 Gasoline Range Hydrocarbons	<15.0	1000	967	97	1000	1100	110	13	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1120	112	1000	1270	127	13	70-135	35	

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

Form 3 - MS / MSD Recoveries

Project Name: Palladium 7-1 4-Inch Poly

Work Order # : 518681 **Project ID:** SRS#2013-044

Lab Batch ID: 981002 **QC- Sample ID:** 518684-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/10/2015 **Date Prepared:** 11/09/2015 **Analyst:** SYG

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000992	0.0992	0.0960	97	0.100	0.0912	91	5	70-130	35	
Toluene	<0.00198	0.0992	0.0841	85	0.100	0.0802	80	5	70-130	35	
Ethylbenzene	<0.000992	0.0992	0.0979	99	0.100	0.0856	86	13	71-129	35	
m_p-Xylenes	<0.00198	0.198	0.213	108	0.200	0.187	94	13	70-135	35	
o-Xylene	<0.000992	0.0992	0.0968	98	0.100	0.0874	87	10	71-133	35	

Lab Batch ID: 980771 **QC- Sample ID:** 518684-006 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/06/2015 **Date Prepared:** 11/05/2015 **Analyst:** PJB

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-C10 Gasoline Range Hydrocarbons	<15.0	1000	1010	101	997	1090	109	8	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1150	115	997	1220	122	6	70-135	35	

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

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

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 11/03/2015 02:45:00 PM

Work Order #: 518681

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	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: Carley Owens Date: 11/03/2015
Carley Owens

Checklist reviewed by: Kelsey Brooks Date: 11/04/2015
Kelsey Brooks

XENCO Laboratories
Environmental Asbestos Radiochemistry

CHAIN OF CUSTODY RECORD

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

Page 1 of 1
LAB W.O#: 518681
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 J. Arguijo	Email:	bjarguijo@basinenv.com
Project ID:	Palladium 7-1 4-Inch Poly SRS #: 2013-044	PO#:	PAA-C. Bryant
Invoice To:	Camille Bryant Plains All American	Quote #:	
Sampler Name:	Robbie Runnels	Circle One Event:	Daily Weekly Monthly Quartely Semi-Annual Annual N/A

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

ANALYSES REQUESTED

Cont Type: VC | GC | GC
Pres Type: | I | I
Lab Only:

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code	Field Filtered	Integrity OK (Y/N)	Total # of Containers	Example Volatiles by 8260	TPH	BTEX								Hold Sample (CALL) on Highest Hit Only	REMARKS
1	SB-1 @ 30'	10/28/2015	1020	S	n	y	1		x	-									Run BTEX if TPH < 5000
2	SB-1 @ 50'	10/28/2015	1103	S	n	y	1		x	-									Run BTEX if TPH < 5000
3	SB-1 @ 80'	10/28/2015	1123	S	n	y	1		x	-									Run BTEX if TPH < 5000
4	SB-1 @ 105'	10/28/2015	1201	S	n	y	1		x	-									Run BTEX if TPH < 5000
5	SB-1 @ 135'	10/28/2015	1316	S	n	y	1		x	-									Run BTEX if TPH < 5000
6	SB-1 @ 140'	10/28/2015	1320	S	n	y	1		x	-									Run BTEX if TPH < 5000
7																			
8																			
9																			
0																			

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

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

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

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

#	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time
1	[signature]		11-2-15	9:22	Yvette Anguiano	Mail Services	11-2-15	0922
2					Bill Kilmon	Xenco	11-3-15	14:45
3								
4								

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

C.O.C. Serial #

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

 Revision Date: Nov 12, 2009

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Final 1.001

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 11/03/2015 02:45:00 PM

Work Order #: 518681

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-3
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**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: Carley Owens — Date: 11/03/2015

Carley Owens

Checklist reviewed by: Kelsey Brooks — Date: 11/04/2015

Kelsey Brooks

Appendix D

Release Notification &

Corrective Action (Form C-141)

Received 5/15/15 NMOCD Artesia

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

fAB1514737885
nAB1514738018

Release Notification and Corrective Action

AMENDED

OPERATOR

☒ Initial Report ☐ Final Repor

Name of Company	Plains Pipeline, LP 240911	Contact	Camille Bryant
Address	2530 State Hwy. 214, Denver City, TX 79323	Telephone No.	(575) 441-1099
Facility Name	Palladium 7-1 4-Inch Poly	Facility Type	4-Inch Poly Pipeline

Surface Owner	Mineral Owner	Lease No.
BLM		

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	5	24S	31E					Eddy

Latitude N 32.2519600° Longitude W 103.800570°

NATURE OF RELEASE

Type of Release: Crude Oil	Volume of Release: >5 bbls	Volume Recovered: 0 bbls
Source of Release: 4-Inch Poly Pipeline	Date and Hour of Occurrence: 03/01/2013 @ 10:51	Date and Hour of Discovery: 03/01/2013 @ 10:51
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Pinhole developed in 4-inch poly pipeline. The pipeline was de-oiled and the damaged portion of the pipeline was replaced.

Describe Area Affected and Cleanup Action Taken. The release was initially believed to be 0.5 barrel; however, on delineation activities the release was amended to greater than five barrels and reported to the NMOCD and BLM. The visually impacted area measured approximately 100' x 60'.The impacted area will be remediated as per applicable NMOCD guidelines.

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

Signature: Camille Bryant

Printed Name: Camille Bryant

Title: Remediation Coordinator

E-mail Address: cjbryant@paalp.com

Date: 5/6/2015 Phone: (575) 441-1099

OIL CONSERVATION DIVISION

Approved by District Supervisor:

Approval Date: 5/26/15 Expiration Date: NA

Conditions of Approval: Attached ☐

Remediation per O.C.D. Rules & Guidelines
SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 5/28/15

2RP-318

* Attach Additional Sheets If Necessary

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Plains Pipeline, LP	Contact: Camille Bryant
Address: 2530 State Hwy. 214, Denver City, TX 79323	Telephone No. (575)441-1099
Facility Name: Palladium 7-1 4-Inch Poly	Facility Type: 4-Inch Poly Pipeline

Surface Owner: BLM	Mineral Owner:	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	5	24S	31E					Eddy

Latitude 32.2519600° North **Longitude** 103.800570° West

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release >5 bbls	Volume Recovered 0 bbls
Source of Release 4-Inch Poly Pipeline	Date and Hour of Occurrence 03/01/2013 @ 10:51	Date and Hour of Discovery 03/01/2013 @ 10:51
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Pinhole developed in 4-inch poly pipeline. The pipeline was de-oiled, and the damaged portion of the pipeline was replaced.

Describe Area Affected and Cleanup Action Taken.* The release was initially believed to be 0.5 barrels; however, on delineation activities, the release was amended to greater than five barrels and reported to the NMOCD and BLM. The visually impacted area measured approximately 100' x 60'. The impacted area was remediated per NMOCD recommended guidelines to the extent practicable. Soil samples collected from delineation trenches, a soil boring, and the floor and sidewalls of the excavation were analyzed by an NMOCD-approved laboratory, and concentrations of benzene and chloride were below the recommended remediation action levels (RRAL's) established for the site by the NMOCD. Soil along the eastern extent of the excavation exhibiting TPH concentrations above the RRAL established for the site will be remediated upon decommission and/or abandonment of the currently active natural gas pipeline. Please reference the attached *Remediation Summary & Risk-Based Site Closure Request* for remediation details.

NM OIL CONSERVATION ARTESIA DISTRICT

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

RECEIVED

Signature: Camille Bryant

Printed Name: Camille Bryant

Title: Remediation Coordinator

E-mail Address: cjbryant@paalp.com

Date: Phone: (575)441-1099

NM OIL CONSERVATION ARTESIA DISTRICT JUN 28 2023 RECEIVED

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: Brittany Hall

Approval Date: 4/25/2023 Expiration Date: N/A

Conditions of Approval: none

Attached ☐

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 203559

CONDITIONS

Operator: PLAINS PIPELINE, L.P. 2000 W Sam Houston Parkway Houston, TX 77042	OGRID: 240911
	Action Number: 203559
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
bhall	None	4/25/2023