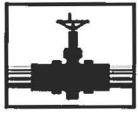


2R-53

Plains

Ballard Grayburg 5" #2

**Annual Report
2013**



PLAINS ALL AMERICAN

March 18, 2014

Mr. Jim Griswold
New Mexico Oil Conservation Division
Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Plains All American – 2013 Annual Monitoring Report
1 Site in Eddy County, New Mexico

Dear Mr. Griswold:

Plains All American is an operator of crude oil pipelines and terminal facilities in the state of New Mexico. Plains All American actively monitors certain historical release sites exhibiting groundwater impacts, consistent with assessments and work plans developed in consultation with the New Mexico Oil Conservation Division (NMOCD). In accordance with the rules and regulations of the NMOCD, Plains All American hereby submits an Annual Monitoring report for the following site:

Ballard Grayburg 5-Inch 2R-0053 Section 10, T18S, R29E, Eddy County

Please note that the 2013 Annual Monitoring Report for the subject site includes a request for site closure, soil remediation activities were closed by the NMOCD in May 2006.

Basin Environmental Service Technologies, LLC (Basin) prepared this document and has vouched for its accuracy and completeness, and on behalf of Plains All American, I have personally reviewed the document and interviewed Basin personnel in order to verify the accuracy and completeness of the report. It is based upon these inquiries and reviews that Plains All American submits the enclosed Annual Monitoring Report for the above facility.

If you have any questions or require further information, please contact me at (575) 441-1099.

Sincerely,

Camille Bryant
Remediation Coordinator
Plains All American

CC: Mike Bratcher, NMOCD, Artesia, NM

Enclosures

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, 2007

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	Plains Marketing, LP	Contact	Camille Bryant
Address	2530 State Hwy. 214, Denver City, TX 79323	Telephone No.	(575) 441-1099
Facility Name	Ballard Grayburg 5" #2	Facility Type	5" Steel 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
M	10	18S	29E					Eddy

Latitude N 32° 45' 27.1" Longitude W 104° 04' 12.0"

NATURE OF RELEASE

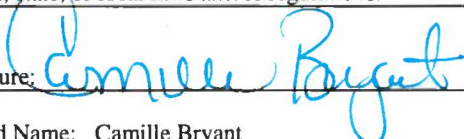
Type of Release	Crude Oil	Volume of Release	80 bbls	Volume Recovered	0 bbls
Source of Release	5" Steel Pipeline	Date and Hour of Occurrence	9/2/2004 @ 06:00	Date and Hour of Discovery	9/2/2004 @ 08:45
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Van Barton		
By Whom?	Ken Dutton	Date and Hour	9/2/2004 @ 14:32		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

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

Describe Area Affected and Cleanup Action Taken. The impacted soil was excavated and stockpiled on plastic. Aerial extent of surface impact was 10 X 6 feet; subsequent excavation of impacted soil resulted in area approximately 22 X 23 X 13 feet. Horizontal & vertical delineation of release site was conducted resulting in the installation of a recovery well and two (2) monitoring wells. The final dimensions of the excavated area were 225 feet long by 60 feet wide and 20 feet bgs, with approximately 6300 cubic yards of impacted and segregated clean overburden stockpiled on-site. Installation of two (2) 40-ml poly-liners was accomplished and backfilling of the excavation was completed. Groundwater monitoring and remediation activities were conducted from December 2004 through December 2013. See Plains Marketing, LP, *Closure Request*, dated May 15, 2006 (NMOCD Reference #2R-0053; approved May 31, 2006), for complete details of soil remediation activities conducted at the release site. Please reference the attached *2013 Annual Monitoring Report & Groundwater Closure Request* for a summary of groundwater remediation activities conducted at the site.

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

Signature: 		OIL CONSERVATION DIVISION	
Printed Name: Camille Bryant		Approved by District Supervisor:	
Title: Remediation Coordinator		Approval Date:	Expiration Date:
E-mail Address: cjbryant@paalp.com		Conditions of Approval:	
Date: 3/31/14 Phone: (575) 441-1099		Attached <input type="checkbox"/>	

* Attach Additional Sheets If Necessary

Basin Environmental Service Technologies, LLC

3100 Plains Highway
P. O. Box 301
Lovington, New Mexico 88260

bjarguijo@basinenv.com

Office: (575) 396-2378 Fax: (575) 396-1429



2013 ANNUAL MONITORING REPORT & GROUNDWATER CLOSURE REQUEST

BALLARD GRAYBURG 5-INCH

Unit Letter "M" (SW/SW), Section 10, Township 18 South, Range 29 East

Latitude 32° 45' 27.1" North, Longitude 104° 04' 12.0" West

Eddy County, New Mexico

Plains SRS Number: 2004-00192

NMOCD Reference Number: 2R-0053

Prepared For:



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

Prepared By:

Basin Environmental Service Technologies, LLC

P. O. Box 301

Lovington, New Mexico 88260

March 2014

Ben J. Arguijo
Project Manager

TABLE OF CONTENTS

INTRODUCTION.....	1
SITE DESCRIPTION & BACKGROUND INFORMATION.....	1
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GROUNDWATER CLOSURE REQUEST.....	5
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FIGURES

Figure 1 – Site Location Map

Figure 2A – Inferred Groundwater Gradient Map – 1Q2013

Figure 2B – Inferred Groundwater Gradient Map – 2Q2013

Figure 2C – Inferred Groundwater Gradient Map – 3Q2013

Figure 2D – Inferred Groundwater Gradient Map – 4Q2013

Figure 3A – Groundwater Concentration Map – 1Q2013

Figure 3B – Groundwater Concentration Map – 2Q2013

Figure 3C – Groundwater Concentration Map – 3Q2013

Figure 3D – Groundwater Concentration Map – 4Q2013

TABLES

Table 1 – 2013 Groundwater Elevation Data

Table 2 – Concentrations of Benzene & BTEX in Groundwater

APPENDICES

Appendix A – Laboratory Analytical Reports

Appendix B - Release Notification and Corrective Action (Form C-141)

INTRODUCTION

Basin Environmental Service Technologies, LLC (Basin), on behalf of Plains Marketing, LP (Plains), is pleased to submit this *Annual Monitoring Report & Groundwater Closure Request* in compliance with the New Mexico Oil Conservation Division (NMOCD) letter of May 1998, requiring submittal of an Annual Monitoring Report by April 1st of each year. This report is intended to be viewed as a complete document with text, figures, tables, and appendices. This report presents the results of the quarterly groundwater monitoring events conducted during the calendar year of 2013 only.

Groundwater monitoring was conducted during each quarter of 2013 to assess the levels and extent of dissolved phase constituents and Phase-Separated Hydrocarbon (PSH). The groundwater monitoring events consisted of measuring static water levels in the monitor wells, checking for the presence of PSH, and purging and sampling of each well exhibiting sufficient recharge.

SITE DESCRIPTION & BACKGROUND INFORMATION

The legal description of the Ballard Grayburg 5-Inch release site is Unit Letter "M" (SW/SW), Section 10, Township 18 South, Range 29 East, in Eddy County, New Mexico. The geographic coordinates of the release site are 32° 45' 27.1" North latitude and 104° 04' 12.0" West longitude. A "Site Location Map" is provided as Figure 1.

On September 2, 2004, Allstate Environmental Services (Allstate) responded to a release on the Ballard Grayburg 5-inch (5") pipeline. Approximately eighty (80) barrels of crude oil were released from the pipeline, with no recovery. During initial response activities, a temporary pipeline clamp was installed to mitigate the release. At the request of Plains, Basin performed subsequent remediation activities at the site. The pipeline was de-oiled, cold cut, and capped.

The Ballard Grayburg 5-Inch release site is located in a pipeline right-of-way in a pasture utilized for cattle grazing. The initial surface stain covered an area approximately twenty-two feet (22') in length and twenty-three feet (23') in width. Excavation activities conducted during the initial response and subsequent remediation activities covered an area measuring approximately two hundred and twenty-five feet (225') in length and sixty feet (60') in width, and ranging from approximately ten feet (10') to approximately twenty feet (20') below ground surface (bgs). Excavated soil was placed adjacent to the excavation on a six (6)-mil poly liner for future remedial activities.

A *Preliminary Site Investigation Report and Remediation Plan* (PSIR), dated November 14, 2004, was submitted and approved by the NMOCD District II Artesia Office and the U. S. Department of the Interior, Bureau of Land Management (BLM), Carlsbad District Office. The approved plan required the excavation of the impacted area to approximately twelve feet (12') to fifteen feet (15') bgs, the collection of confirmation soil samples, the installation of a forty (40)-mil polyurethane liner, the on-site blending of non-impacted segregated overburden and impacted soil, and backfilling of the excavation with the blended soil. In March 2006, an electronic revision was submitted and subsequently approved by the NMOCD (Santa Fe) and the BLM. The approved revision required the excavation of the impacted area to a depth of approximately eighteen feet

(18') to twenty feet (20') bgs, the installation of a forty (40)-mil poly liner on the floor of the excavation, the blending of the non-impacted segregated overburden and impacted soil, and the collection of soil samples at five hundred cubic yard (500 yd³) intervals to ensure that total petroleum hydrocarbon (TPH) constituent concentrations were less than 1,000 mg/kg. Following the remediation activities, the plan required reseeding the site with BLM-approved grass seed.

Soil remediation activities at the Ballard Grayburg 5-Inch release site were completed in accordance with the NMOCD-approved *Remediation Plan*, dated December, 14, 2005, and Revision, dated March 20, 2006. Based on the results of the NMOCD-approved remediation activities conducted at the site, Basin Environmental, on behalf of Plains, prepared and submitted a *Soil Closure Request* to the NMOCD Santa Fe District Office on May 15, 2006.

Based on initial delineation of the release site, two (2) groundwater monitoring wells (MW-2 and MW-3) were installed to evaluate the quality of groundwater, and one (1) recovery well (RW-1) was installed due to the presence of PSH detected in soil samples collected during drilling activities. There was no visual evidence of PSH impact in the soil samples collected during the installation of monitor wells MW-2 and MW-3.

Absorbent medium was placed in recovery well RW-1 to absorb the limited quantities of crude oil on the groundwater. The absorbent medium was inspected and replaced on a monthly schedule. During excavation of the release area, recovery well RW-1 collapsed. The approved PSIR revision stipulated installation of an additional recovery well located north-northwest of recovery well RW-1 would be attempted once backfilling of the excavation was completed. In July 2006, an attempt to install the additional recovery well was initiated. However, subsurface limestone caverns were encountered during drilling activities, and the installation of the recovery well was not possible.

Currently, there are two (2) groundwater monitor wells (MW-2 and MW-3) on site. In a letter dated October 2, 2009, the NMOCD granted Plains approval to modify the groundwater monitoring frequency at the site. Monitor well MW-2 is sampled on an annual basis, and monitor well MW-3 is sampled on a quarterly basis.

FIELD ACTIVITIES

Groundwater Remediation Efforts

On May 15, 2013, an Oxygen Release Compound (ORC®) filter sock was installed in monitor well MW-3 to facilitate enhanced aerobic biodegradation of the dissolved-phase plume.

Groundwater Monitoring

Quarterly groundwater monitoring events were conducted on February 6 (1Q2013), April 18 (2Q2013), August 23 (3Q2013), and November 15, 2013 (4Q2013). During these quarterly monitoring events, the monitoring wells were gauged and purged of a minimum of three (3) well volumes of water (or until the wells were dry) using a PVC bailer or electrical Grundfos pump. Groundwater was allowed to recharge, and samples were obtained using disposable Teflon bailers. Water samples were stored in clean, glass containers provided by the laboratory and placed on ice

in the field. Purge water was collected in a trailer-mounted polystyrene tank and disposed of at an NMOCD-approved disposal facility near Monument, New Mexico.

Locations of the groundwater monitoring wells and the inferred groundwater elevations were constructed from measurements collected during the quarterly monitoring events and are depicted in Figures 2A through 2D. The groundwater elevation data is provided as Table 1. An inferred groundwater gradient map cannot be constructed from the observed groundwater elevation data derived from the two (2) on-site monitor wells. An inferred groundwater gradient map requires a minimum of three (3) monitor wells to calculate an accurate groundwater gradient direction and magnitude. Review of New Mexico Office of the State Engineer (NMOSE) records indicates a general south-to-southwest groundwater gradient in this area of Eddy County, New Mexico. The corrected groundwater elevations ranged from 3,352.15 to 3,353.43 feet above mean sea level, in monitor well MW-3 (4Q2013) and monitor well MW-2 (1Q2013), respectively.

The groundwater elevation data presented above indicates observed groundwater elevations are approximately forty-two feet (42') more shallow than observed groundwater elevations presented in the 2007 and prior Groundwater Monitoring Reports. This inconsistency in observed groundwater elevation may be related to the karstic nature of the subsurface beneath the release site, as depicted in the monitor well and recovery well logs previously submitted to the NMOCD.

LABORATORY RESULTS

Groundwater samples collected from the monitor wells during the quarterly monitoring events (1Q2013, 2Q2013, 3Q2013, and 4Q2013) were delivered to Xenco Laboratories in Odessa, Texas, for determination of benzene, toluene, ethylbenzene, and total xylene (BTEX) constituent concentrations by EPA Method SW846-8021b. A summary of BTEX constituent concentrations is presented in Table 2, "Concentrations of Benzene & BTEX in Groundwater". Laboratory analytical reports are provided as Appendix A. "Groundwater Concentration" maps are provided as Figures 3A through 3D.

Laboratory analytical results were compared to NMOCD regulatory limits based on the New Mexico groundwater standards found in section 20.6.2.3103 of the New Mexico Administrative Code (NMAC).

Quarterly Monitoring Data

Monitor well MW-2

Monitor well MW-2 is sampled on an annual basis. Laboratory analytical results from the sample collected on April 8, 2013, indicated benzene, toluene, ethylbenzene, and total xylene concentrations were both less than the appropriate laboratory method detection limit (MDL) and less than NMOCD regulatory standards.

Monitor well MW-3

Monitor well MW-3 is sampled on a quarterly basis. Laboratory analytical results indicated benzene concentrations ranged from 0.0010 mg/L in 4Q2013 to 0.0181 mg/L 2Q2013. Toluene concentrations ranged from less than the laboratory MDL in 1Q2013, 3Q2013 and 4Q2013 to 0.0032 mg/L in 2Q2013. Ethylbenzene concentrations were less than the appropriate laboratory MDL during all four quarters of the reporting period. Total xylene concentrations ranged from less than the laboratory MDL in 1Q2013, 3Q2013 and 4Q2013 to 0.0039 mg/L in 2Q2013. Benzene concentrations exceeded NMOCD regulatory standards during 2Q2013. Toluene, ethylbenzene, and total xylene concentrations were less than the appropriate NMOCD regulatory standard during all four quarters of the reporting period.

QA/QC PROCEDURES

Groundwater Sampling

Groundwater samples were submitted to Xenco Laboratories in Odessa, Texas, for analysis of BTEX constituent concentrations in accordance with EPA Method SW846-8021b. All samples were analyzed within seven (7) days of the collection date.

Decontamination of Equipment

Cleaning and decontamination 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.

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.

SUMMARY

Based on the depth of the soil impact at this site, the NMOCD requested four (4) quarterly groundwater monitoring events to be conducted at this site. This report presents the results of monitoring activities for the 2013 monitoring period. Currently, there are two (2) groundwater monitoring wells (MW-2 and MW-3) on-site. Monitor well MW-2 is sampled on an annual basis, and monitor well MW-3 is sampled on a quarterly basis.

Review of NMOSE records indicate a general groundwater gradient to the south-southwest.

Groundwater elevation data indicates observed groundwater elevations are approximately forty-two feet (42') more shallow than observed groundwater elevations presented in the 2007 (and prior) *Annual Monitoring Report*. This inconsistency in observed groundwater elevation may be related

to the karstic nature of the subsurface beneath the release site, as depicted in the monitor well and recovery well logs previously submitted to the NMOCD.

Laboratory analytical results indicated benzene concentrations exceeded NMOCD regulatory standards during 2Q2013 in groundwater samples collected from monitor well MW-3. Toluene, ethylbenzene, and total xylene concentrations were less than NMOCD regulatory standards during all four quarters of the reporting period.

GROUNDWATER CLOSURE REQUEST

Review of laboratory analytical results from groundwater samples collected from monitor wells MW-2 and MW-3 at the Ballard Grayburg 5-Inch release site indicate concentrations of toluene, ethylbenzene, and total xylene have been less than NMWQCC and NMOCD regulatory standards in all submitted groundwater samples since groundwater monitoring activities commenced in December 2004. Benzene concentrations in monitor well MW-2 have been both below the laboratory MDL and NMWQCC/NMOCD regulatory standards since June 1, 2011. Benzene concentrations in monitor well MW-3 have been steadily decreasing over time, with four (4) of the last six (6) quarterly samples exhibiting benzene concentrations below NMWQCC/NMOCD regulatory standards. A cumulative groundwater chemistry table is provided as Table 2.

With the installation of an ORC® filter sock in monitor well MW-3 on May 15, 2013, Basin Environmental and Plains believe that groundwater contamination at the Ballard Grayburg 5-Inch release site has been remediated to the extent practicable. Plains hereby requests permission to cease groundwater monitoring activities at the site and to plug and abandon the two (2) on-site monitor wells. Pending NMOCD approval, the monitor wells will be plugged and abandoned pursuant to NMOSE and NMOCD regulatory requirements. A monitor well plugging report will be submitted to the NMOCD Santa Fe District Office within thirty (30) calendar days of completion.

LIMITATIONS

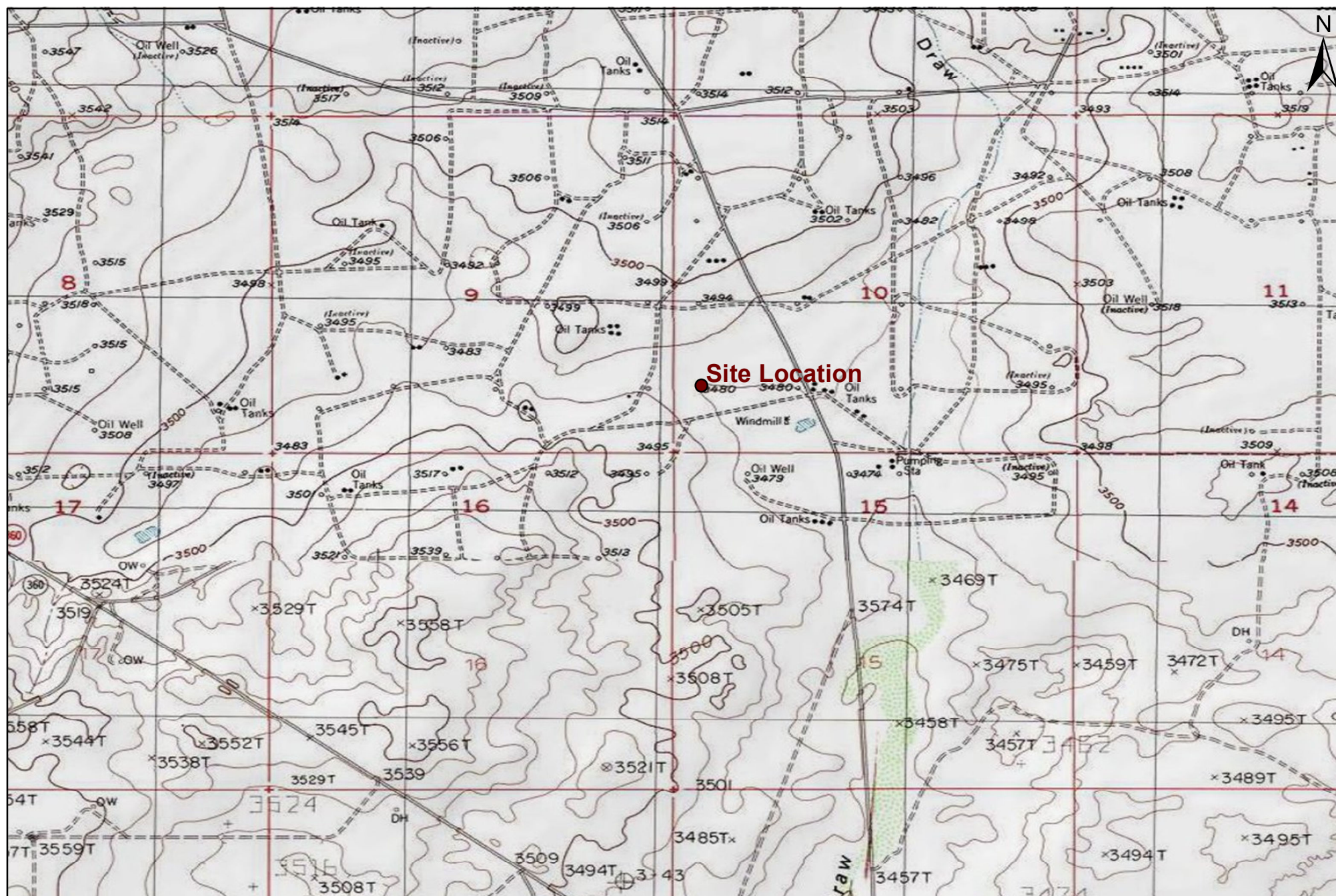
Basin Environmental Service Technologies, LLC, has prepared this *Annual Monitoring Report & Groundwater Closure Request* to the best of its ability. No other warranty, expressed or implied, is made or intended. Basin has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Basin has not conducted an independent examination of the facts contained in referenced materials and statements. Basin has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Basin has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin 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 Marketing, 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 Marketing, LP.

DISTRIBUTION

- Copy 1: Jim Griswold
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
jim.griswold@state.nm.us
- Copy 2: Mike Bratcher
New Mexico Oil Conservation Division, District II
1301W. Grand Avenue
Artesia, New Mexico 88210
mike.bratcher@state.nm.us
- Copy 3: Jeff Dann
Plains Marketing, 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
cjbryant@paalp.com
- Copy 5: Basin Environmental Service Technologies, LLC
P. O. Box 301
Lovington, New Mexico 88260

Figures




1,000 500 0 1,000 2,000

 Distance in Feet

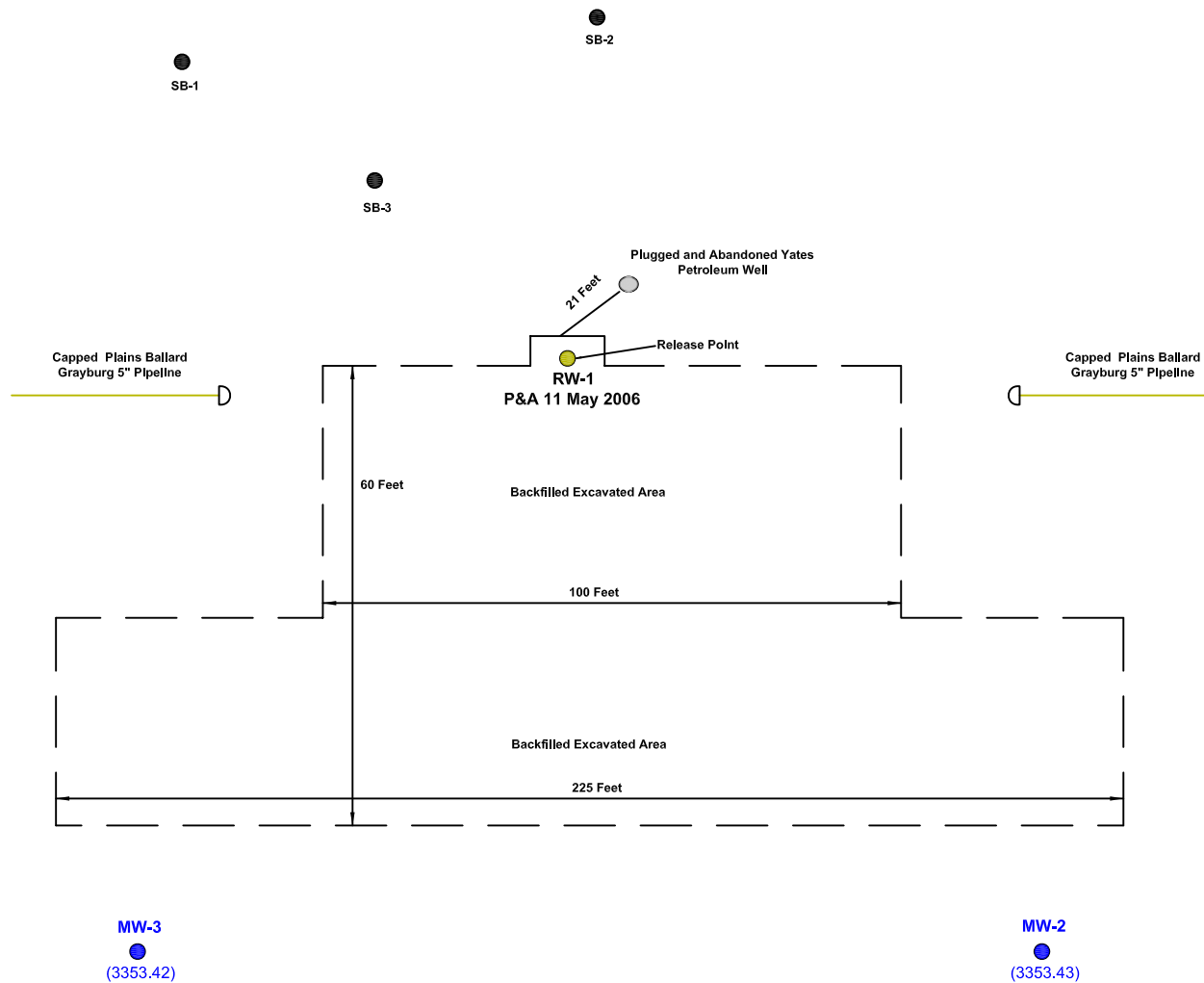
Figure 1
 Site Location Map
 Plains Marketing, LP
 Ballard Grayburg 5"
 Plains SRS #: 2004-00192
 NMCD Ref. #: 2RP-0053
 Eddy County, New Mexico



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

Drawn By: BJA Checked By: BRB

January 18, 2013 Scale: 1" = 2000'



LEGEND:

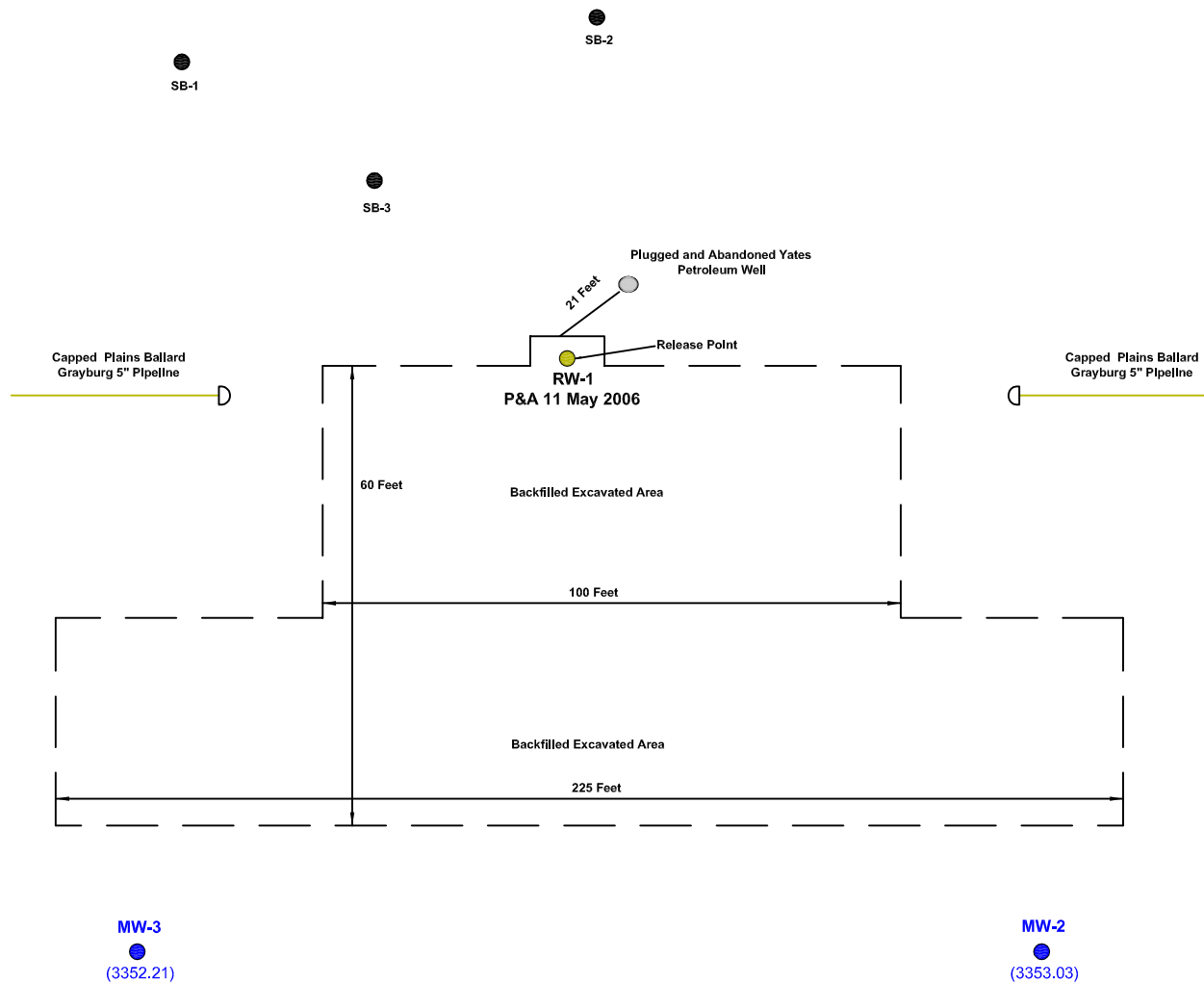
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- Excavation Extents
- Fence
- Pipeline
- Groundwater Gradient Contour Line
- Groundwater Elevation (feet)
- (3801.46)
- 0.003 ft / ft
- Groundwater Gradient Direction and Magnitude

Figure 2A
Groundwater Elevation
(2/6/2013)

Plains Marketing, LP
Ballard Grayburg 5-Inch
Lea County, NM
2RP-0063

Basin Environmental Service Technologies

Scale: 1" = 80'	Drawn By: BJA	Checked By: BRB
April 9, 2013	SE1/4 NE1/4 Sec 16 T17S R37E	
		Lat. N32° 51' 56" Long. W103° 17' 07.2"



LEGEND:

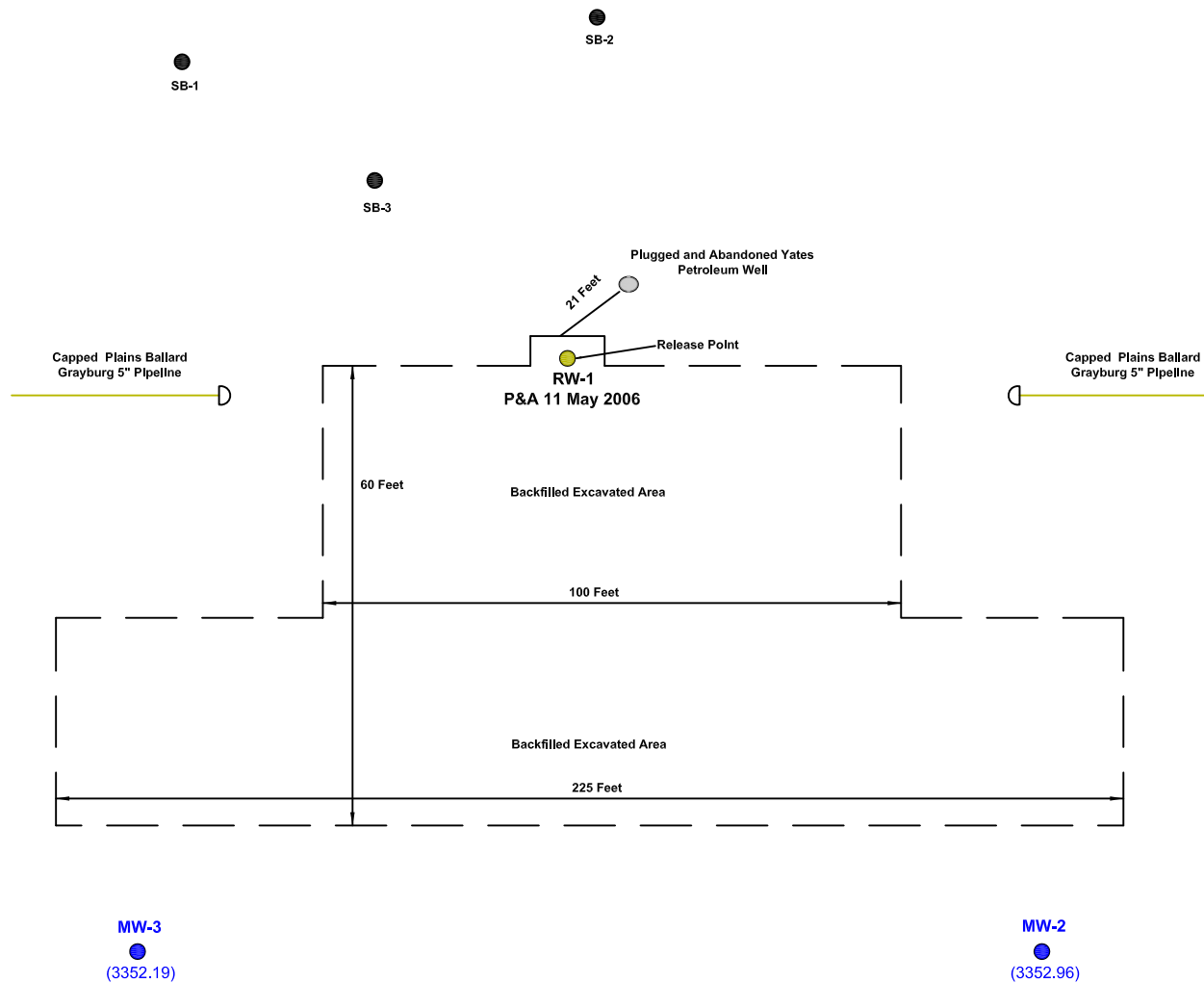
- Monitor Well Location
 - Excavation Extents
 - Fence
 - Pipeline
 - Groundwater Gradient Contour Line
 - Groundwater Elevation (feet)
 - Groundwater Gradient Direction and Magnitude
- (3801.46)
0.003 ft / ft

Figure 2B
Groundwater Elevation
(4/18/2013)

Plains Marketing, LP
Ballard Grayburg 5-Inch
Lea County, NM
2RP-0063

Basin Environmental Service Technologies

Scale: 1" = 80'	Drawn By: BJA	Checked By: BRB
July 9, 2013	SE1/4 NE1/4 Sec 16 T17S R37E	
		Lat. N32° 51' 56" Long. W103° 17' 07.2"



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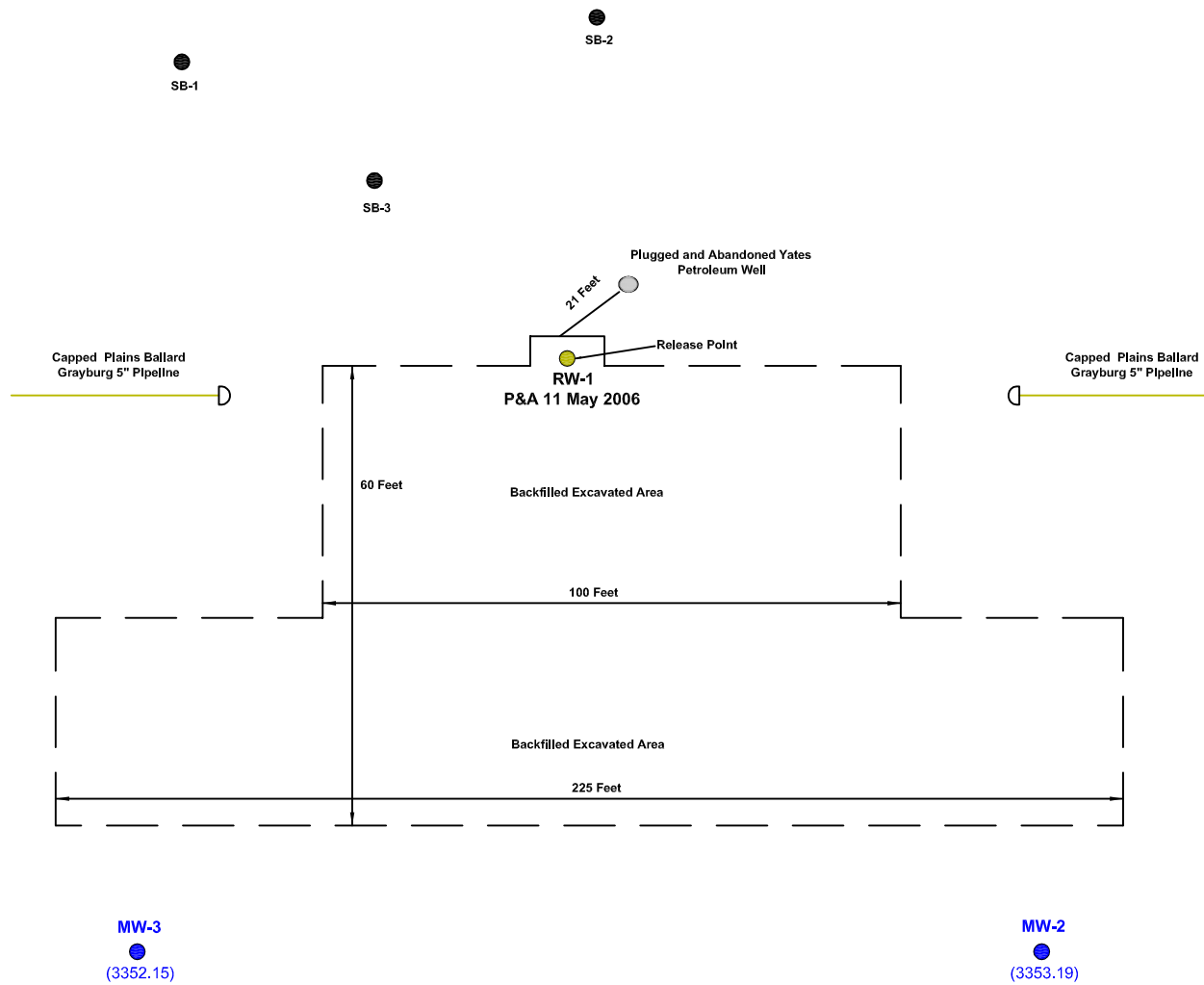
- Monitor Well Location
- Excavation Extents
- Fence
- Pipeline
- Groundwater Gradient Contour Line
- (3801.46) Groundwater Elevation (feet)
- 0.003 ft / ft Groundwater Gradient Direction and Magnitude

Figure 2C
Groundwater Elevation
(8/23/2013)

Plains Marketing, LP
Ballard Grayburg 5-Inch
Lea County, NM
2RP-0063

Basin Environmental Service Technologies

Scale: 1" = 80'	Drawn By: BJA	Checked By: BRB
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LEGEND:

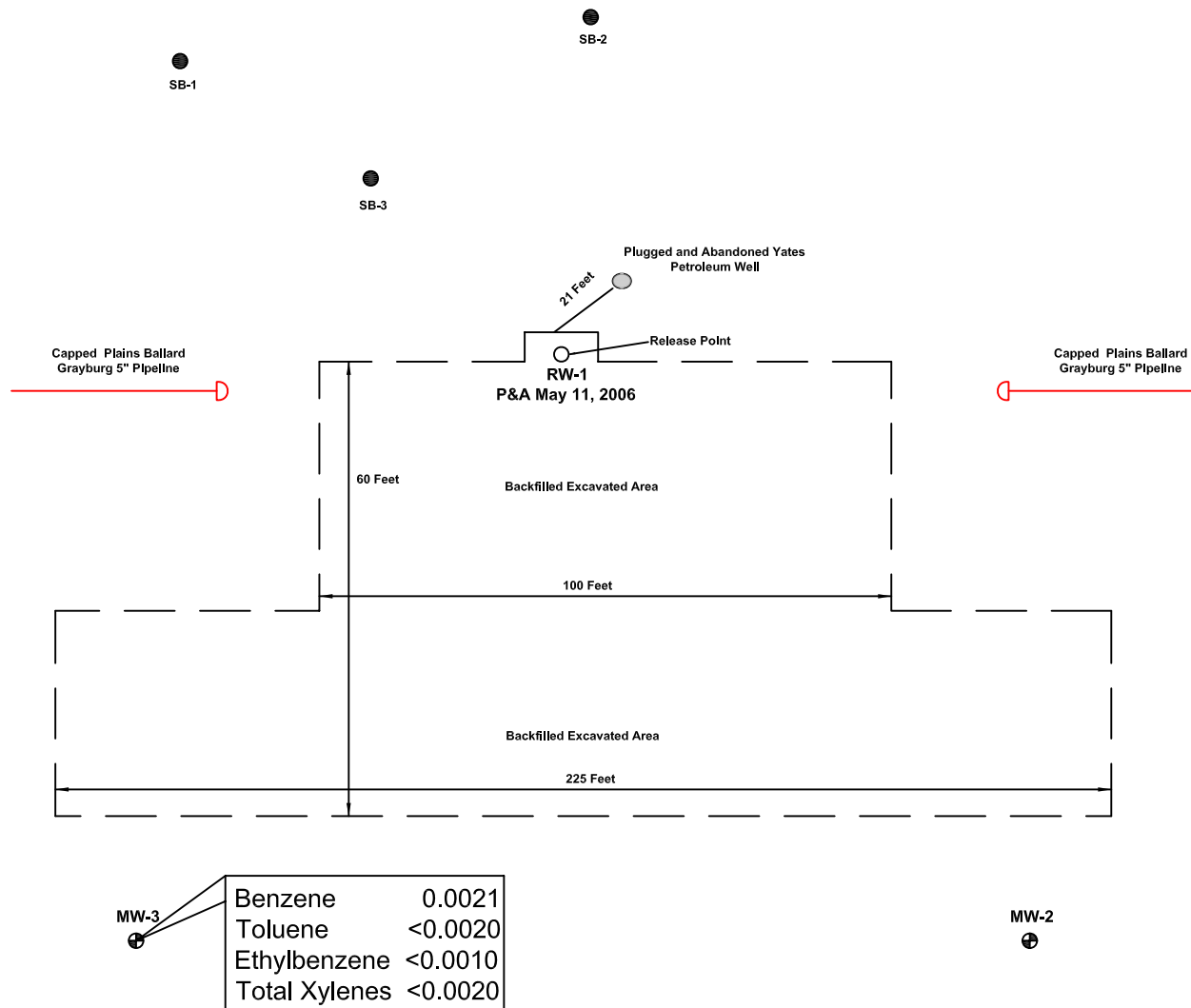
- Monitor Well Location
- Excavation Extents
- Fence
- Pipeline
- Groundwater Gradient Contour Line
- Groundwater Elevation (feet)
- Groundwater Gradient Direction and Magnitude

Figure 2D
Groundwater Elevation
(11/15/2013)

Plains Marketing, LP
Ballard Grayburg 5-Inch
Lea County, NM
2RP-0063

Basin Environmental Service Technologies

Scale: 1" = 80'	Drawn By: BJA	Checked By: BRB
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Note: All concentrations in mg/L

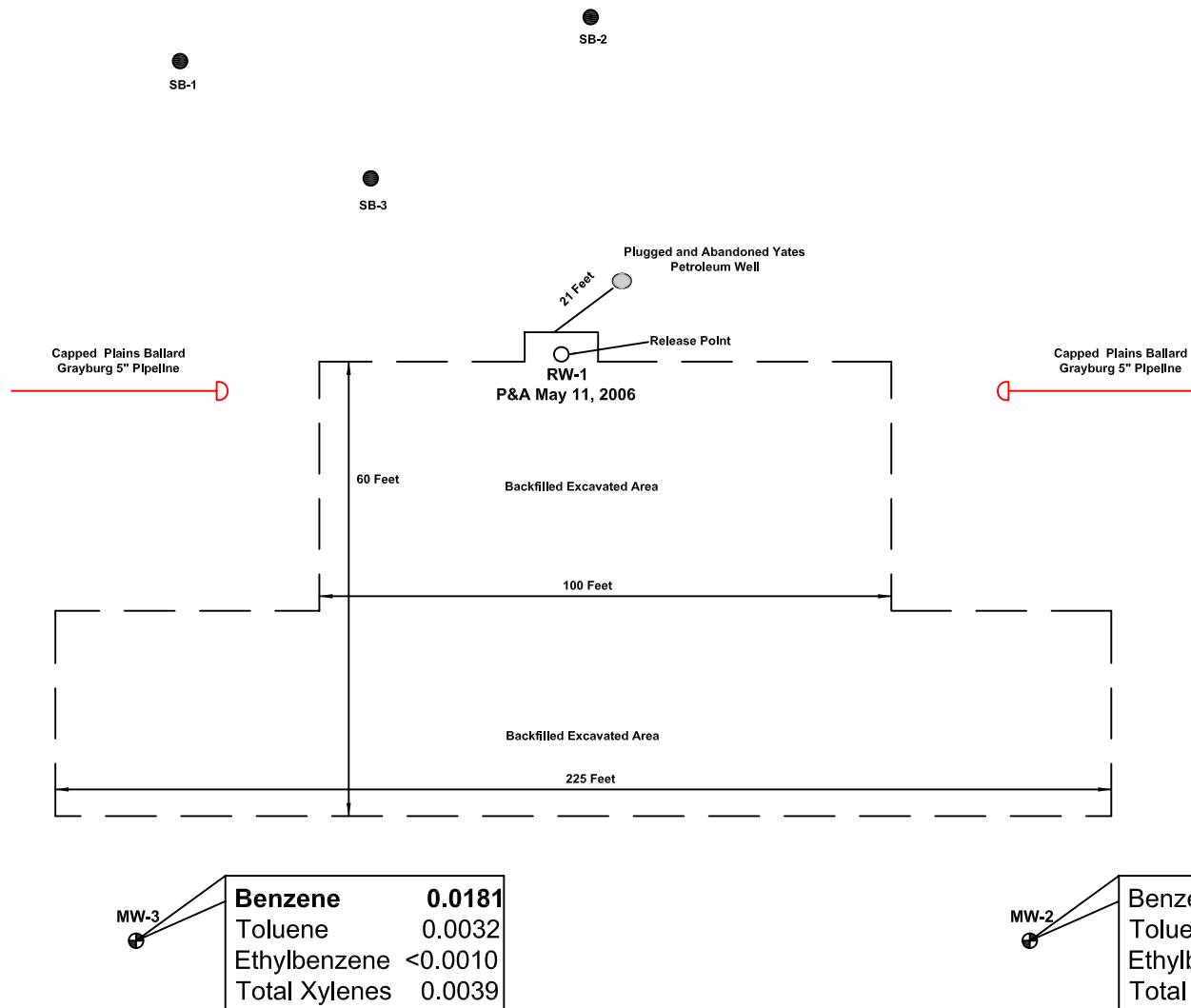
LEGEND:

- MW-1 Monitor Well Location
- Excavation Extents
- Pipeline
- SB-1 Soil Boring Location
- <0.001 Constituent Concentration (mg/L)

Figure 3A
Groundwater
Concentration Map
(2/6/2013)
Plains Marketing, LP
Ballard Grayburg 5-Inch
Eddy County, NM
2RP-0053

Basin Environmental Service Technologies

Scale: Not to Scale	Drawn By: BJA	Checked By: BRB
April 8, 2013	SW1/4 SW1/4 Sec 10 T18S R29E	
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Note: All concentrations in mg/L

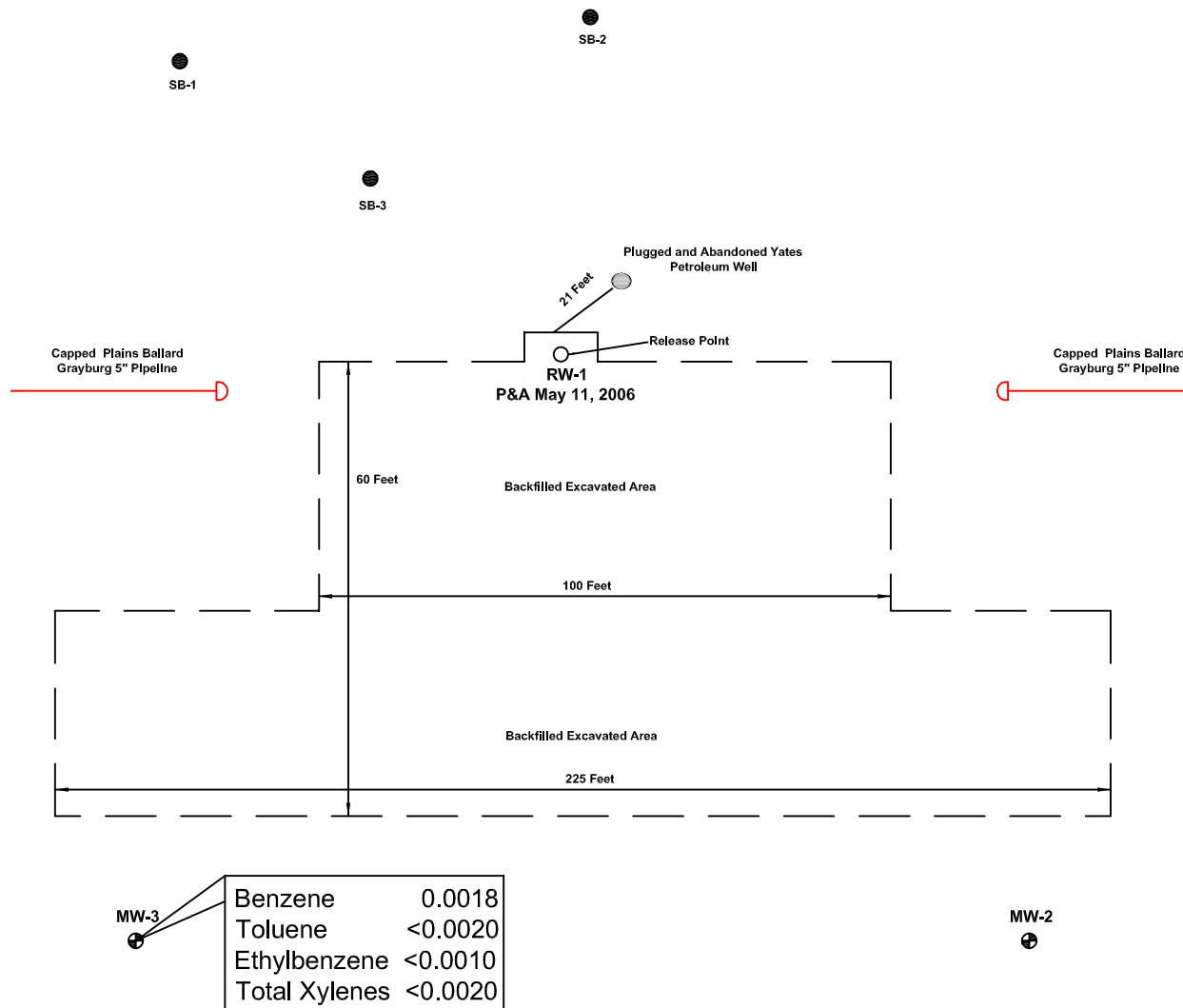
LEGEND:

- MW-1 Monitor Well Location
- Excavation Extents
- Pipeline
- SB-1 Soil Boring Location
- <0.001 Constituent Concentration (mg/L)

Figure 3B
Groundwater
Concentration Map
(4/18/2013)
Plains Marketing, LP
Ballard Grayburg 5-Inch
Eddy County, NM
2RP-0053

Basin Environmental Service Technologies

Scale: Not to Scale	Drawn By: BJA	Checked By: BRB
July 9, 2013	SW1/4 SW1/4 Sec 10 T18S R29E	
	Lat. N32° 45' 27.1" Long. W104° 04' 12.0"	



Note: All concentrations in mg/L

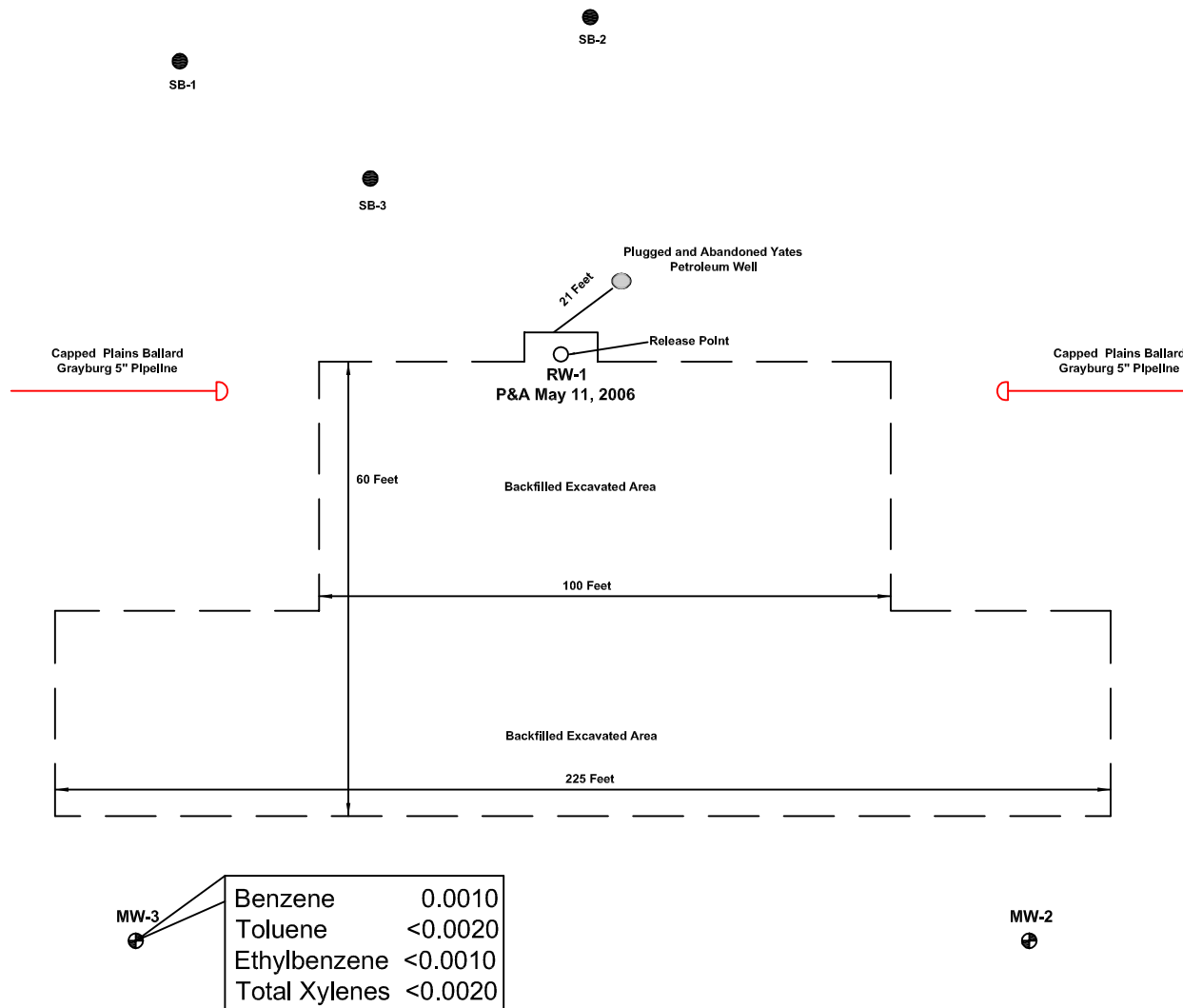
LEGEND:

- Monitor Well Location
- Excavation Extents
- Pipeline
- Soil Boring Location
- <0.001 Constituent Concentration (mg/L)

Figure 3C
Groundwater
Concentration Map
(8/23/2013)
Plains Marketing, LP
Ballard Grayburg 5-Inch
Eddy County, NM
2RP-0053

Basin Environmental Service Technologies

Scale: Not to Scale	Drawn By: BJA	Checked By: BRB
November 15, 2013	SW1/4 SW1/4 Sec 10 T18S R29E	
		Lat. N32° 45' 27.1" Long. W104° 04' 12.0"



Note: All concentrations in mg/L

LEGEND:

- MW-1
 Monitor Well Location
- Excavation Extents
- Pipeline
- SB-1
 Soil Boring Location
- <0.001
 Constituent Concentration (mg/L)

Figure 3D
Groundwater
Concentration Map
(11/15/2013)
Plains Marketing, LP
Ballard Grayburg 5-Inch
Eddy County, NM
2RP-0053

Basin Environmental Service Technologies

Scale: Not to Scale	Drawn By: BJA	Checked By: BRB
January 22, 2014	SW1/4 SW1/4 Sec 10 T18S R29E	
	Lat. N32° 45' 27.1" Long. W104° 04' 12.0"	

Tables

TABLE 1**2013 GROUNDWATER ELEVATION DATA**

**PLAINS PIPELINE, L.P.
BALLARD GRAYBURG 5-INCH
EDDY COUNTY, NEW MEXICO
PLAINS SRS NO: 2004-192
NMOCD REFERENCE NO: 2RP-0053**

WELL NUMBER	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW-2	2/6/2013	3,497.90	-	144.47	-	3,353.43
	4/18/2013	3,497.90	-	144.87	-	3,353.03
	8/23/2013	3,497.90	-	144.94	-	3,352.96
	11/15/2013	3,497.90	-	144.71	-	3,353.19
MW-3	2/6/2013	3,497.91	-	144.49	-	3,353.42
	4/18/2013	3,497.91	-	145.70	-	3,352.21
	8/23/2013	3,497.91	-	145.72	-	3,352.19
	11/15/2013	3,497.91	-	145.76	-	3,352.15
NOTE: RW-1 Plugged & Abandoned May 11, 2006						

TABLE 2

CONCENTRATIONS OF BENZENE & BTEX IN GROUNDWATER

PLAINS MARKETING, L.P.
 BALLARD GRAYBURG 5"
 EDDY COUNTY, NEW MEXICO
 PLAINS SRS #: 2004-00192
 NMOCD REFERENCE #: 2RP-0053

SAMPLE LOCATION	SAMPLE DATE	METHODS: EPA SW 846-8021b						
		BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL- BENZENE (mg/L)	M,P- XYLENES (mg/L)	O-XYLENES (mg/L)	TOTAL XYLENE (mg/L)	TOTAL BTEX (mg/L)
MW-2	12/4/2004	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	3/29/2005	0.0060	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0070
	5/26/2005	0.0020	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0030
	8/11/2005	0.0010	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0020
	12/27/2005	0.0080	0.0030	<0.0010	<0.0010	<0.0010	<0.0010	0.0110
	3/30/2006	0.0030	0.0030	<0.0010	<0.0010	<0.0010	<0.0010	0.0060
	6/14/2006	0.0050	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0060
	9/20/2006	0.0030	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0030
	12/14/2006	0.0100	0.0020	<0.001	0.0010	<0.001	0.0010	0.0140
	3/19/2007	0.0430	0.0130	<0.001	<0.001	<0.001	<0.0010	0.0560
	6/5/2007	0.0120	0.0010	<0.001	<0.001	<0.001	<0.0010	0.0130
	9/27/2007	0.0030	0.0010	<0.001	<0.002	<0.001	<0.0010	0.0040
	12/4/2007	0.0130	0.0040	<0.001	<0.002	<0.001	<0.0010	0.0170
	3/12/2008	0.0020	0.0030	<0.0010	<0.0020	<0.0010	<0.0020	0.005
	6/14/2008	0.0130	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.013
	9/19/2008	0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.001
	11/21/2008	0.0010	<0.0020	0.0010	0.0023	<0.0010	0.0023	0.0043
	2/17/2009	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020
	6/16/2009	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020
	8/25/2009	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020
	11/5/2009	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020
	6/1/2010	0.0293	<0.002	0.0053	0.0026	<0.001	0.0026	0.0372
	6/1/2011	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020
	6/7/2012	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020
	4/18/2013	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020

TABLE 2

CONCENTRATIONS OF BENZENE & BTEX IN GROUNDWATER

PLAINS MARKETING, L.P.
 BALLARD GRAYBURG 5"
 EDDY COUNTY, NEW MEXICO
 PLAINS SRS #: 2004-00192
 NMOCD REFERENCE #: 2RP-0053

SAMPLE LOCATION	SAMPLE DATE	METHODS: EPA SW 846-8021b						
		BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL- BENZENE (mg/L)	M,P- XYLENES (mg/L)	O-XYLENES (mg/L)	TOTAL XYLENE (mg/L)	TOTAL BTEX (mg/L)
MW-3	12/4/2004	<0.0010	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
	3/29/2005	0.0540	0.0040	<0.001	<0.0010	<0.0010	<0.0010	0.0580
	5/26/2005	0.0140	0.0030	<0.001	<0.0010	<0.0010	<0.0010	0.0170
	8/11/2005	0.0020	<0.001	<0.001	<0.0010	<0.0010	<0.0010	0.0020
	12/27/2005	0.0240	0.0020	<0.001	<0.0010	<0.0010	<0.0010	0.0260
	3/30/2006	0.0090	0.0030	<0.001	<0.0010	<0.0010	<0.0010	0.0120
	6/14/2006	0.0050	<0.001	<0.001	<0.0010	<0.0010	<0.0010	0.0050
	9/20/2006	0.0040	<0.001	<0.001	<0.0010	<0.0010	<0.0010	0.0040
	12/14/2006	0.0110	0.0030	<0.001	0.0030	<0.001	0.0030	0.0200
	3/19/2007	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	6/5/2007	0.091	0.031	<0.001	<0.0010	<0.0010	<0.0010	0.1220
	9/27/2007	0.0170	0.0030	<0.001	<0.0020	<0.0010	<0.0020	0.0200
	12/4/2007	0.0130	0.0030	<0.001	<0.0020	<0.0010	<0.0020	0.0160
	3/12/2008	0.0080	0.0020	<0.001	<0.0020	<0.0010	<0.0020	0.0100
	6/14/2008	0.1790	0.0110	<0.001	<0.0020	<0.0010	<0.0020	0.1900
	9/19/2008	0.0090	<0.002	<0.001	<0.0020	<0.0010	<0.0020	0.0090
	11/21/2008	0.0150	0.0021	<0.001	<0.0020	<0.0010	<0.0020	0.0171
	2/17/2009	0.0117	0.0024	<0.0010	<0.0020	<0.0010	<0.0020	0.0024
	6/16/2009	0.0112	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020
	8/25/2009	0.0141	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020
	11/5/2009	0.0088	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020
	3/31/2010	0.0151	0.0023	<0.0010	<0.0020	<0.0010	<0.0020	0.0174
	6/1/2010	0.0198	0.0046	<0.0010	<0.0020	<0.0010	<0.0020	0.0244
	9/3/2010	0.0119	0.0021	<0.0010	<0.0020	<0.0010	<0.0020	0.0140
	11/8/2010	0.0119	0.0023	<0.0010	<0.0020	<0.0010	<0.0020	0.0142
	3/16/2011	0.0341	0.0049	<0.0010	<0.0020	<0.0010	<0.0020	0.0390

TABLE 2

CONCENTRATIONS OF BENZENE & BTEX IN GROUNDWATER

PLAINS MARKETING, L.P.
 BALLARD GRAYBURG 5"
 EDDY COUNTY, NEW MEXICO
 PLAINS SRS #: 2004-00192
 NMOCD REFERENCE #: 2RP-0053

SAMPLE LOCATION	SAMPLE DATE	METHODS: EPA SW 846-8021b						
		BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL- BENZENE (mg/L)	M,P- XYLENES (mg/L)	O-XYLENES (mg/L)	TOTAL XYLENE (mg/L)	TOTAL BTEX (mg/L)
MW-3	6/1/2011	0.0071	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0071
	9/7/2011	0.0192	0.0029	<0.0010	<0.0020	<0.0010	<0.0020	0.0221
	10/26/2011	0.0032	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0032
	1/18/2012	0.0115	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0115
	6/7/2012	0.0305	0.0037	<0.0010	<0.0020	<0.0010	<0.0020	0.0342
	9/12/2012	0.0059	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0059
	10/30/2012	0.0198	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0198
	2/6/2013	0.0021	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0021
	4/18/2013	0.0181	0.0032	<0.0010	<0.0020	0.0039	0.0039	0.0291
	8/23/2013	0.0018	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0018
	11/15/2013	0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	0.0010
NMOCD CRITERIA		0.01	0.75	0.75	TOTAL XYLENES 0.62			

Appendices

Appendix A

Laboratory Analytical Reports

Analytical Report 457296

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo
Ballard Grayburg 5" SRS #2004-00192

13-FEB-13

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

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)



13-FEB-13

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

Reference: XENCO Report No(s): **457296**
Ballard Grayburg 5" SRS #2004-00192
Project Address: Lovington

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) 457296. 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. 457296 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,

Nicholas Straccione

Project Manager

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Sample Cross Reference 457296



PLAINS ALL AMERICAN EH&S, Midland, TX

Ballard Grayburg 5" SRS #2004-00192

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-3	W	02-06-13 09:45		457296-001



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Ballard Grayburg 5" SRS #2004-00192



Project ID:
Work Order Number(s): 457296

Report Date: 13-FEB-13
Date Received: 02/08/2013

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 457296

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Ballard Grayburg 5" SRS #2004-00192



Project Id:

Contact: Ben Arguijo

Project Location: Lovington

Date Received in Lab: Fri Feb-08-13 01:36 pm

Report Date: 13-FEB-13

Project Manager: Nicholas Straccione

Analysis Requested	Lab Id: Field Id: Depth: Matrix: Sampled:	457296-001 MW-3 WATER Feb-06-13 09:45					
BTEX by EPA 8021B	Extracted: Analyzed: Units/RL:	Feb-13-13 08:10 Feb-13-13 11:07 mg/L RL					
Benzene		0.00210 0.00100					
Toluene		ND 0.00200					
Ethylbenzene		ND 0.00100					
m_p-Xylenes		ND 0.00200					
o-Xylene		ND 0.00100					
Total Xylenes		ND 0.00100					
Total BTEX		0.00210 0.00100					

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

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

Nicholas Straccione
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 **SQL** 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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 9701 Harry Hines Blvd, Dallas, TX 75220
 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: Ballard Grayburg 5" SRS #2004-00192

Work Orders : 457296,

Project ID:

Lab Batch #: 906894

Sample: 457296-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 02/13/13 11:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0245	0.0300	82	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 906894

Sample: 633784-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 02/13/13 09:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

Lab Batch #: 906894

Sample: 633784-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 02/13/13 08:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0325	0.0300	108	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 906894

Sample: 633784-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 02/13/13 09:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Lab Batch #: 906894

Sample: 457415-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 02/13/13 10:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	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: Ballard Grayburg 5" SRS #2004-00192

Work Orders : 457296,

Project ID:

Lab Batch #: 906894

Sample: 457415-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 02/13/13 10:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: Ballard Grayburg 5" SRS #2004-00192

Work Order #: 457296

Analyst: KEB

Date Prepared: 02/13/2013

Project ID:

Date Analyzed: 02/13/2013

Lab Batch ID: 906894

Sample: 633784-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0889	89	0.100	0.0893	89	0	70-125	25	
Toluene	<0.00200	0.100	0.0848	85	0.100	0.0888	89	5	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0854	85	0.100	0.0868	87	2	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.164	82	0.200	0.170	85	4	70-131	25	
o-Xylene	<0.00100	0.100	0.0848	85	0.100	0.0871	87	3	71-133	25	

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: Ballard Grayburg 5" SRS #2004-00192

Work Order # : 457296

Project ID:

Lab Batch ID: 906894

QC- Sample ID: 457415-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 02/13/2013

Date Prepared: 02/13/2013

Analyst: KEB

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.100	100	0.100	0.0897	90	11	70-125	25	
Toluene	<0.00200	0.100	0.0957	96	0.100	0.0857	86	11	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0983	98	0.100	0.0871	87	12	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.194	97	0.200	0.170	85	13	70-131	25	
o-Xylene	<0.00100	0.100	0.0991	99	0.100	0.0860	86	14	71-133	25	

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



CHAIN OF CUSTODY RECORD

Page 1 of 1

Houston: 4143 Greenbriar Dr. Stafford, TX 77477 (281)240-4200 Odessa: 12600 West I-20 East Odessa, TX 79765 (432)563-1800
Hobbs: 4008 N Grimes Hobbs, NM 88240 (575)392-7550

LAB W.O #:

457296

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
PM/Attn:	Ben Arguijo	Email:	bjarguijo@basinenv.com
Project ID:	Ballard Grayburg 5" SRS #2004-00192	PO#:	PAA-J. Henry
Invoice To:	Jason Henry 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

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	

Sampler Signature:	Circle One Event: Daily Weekly Monthly Quarterly
--------------------	--

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code	Field Filtered	Preserved	Sealed	Example Volatiles by 8200	TPH	BTEX	Chloride	Lab Only
1	MW-3	2/6/13	09:45	GW			3			X		
2												
3												
4												
5												
6												
7												
8												
9												
0												

ANALYSES REQUESTED											
Source Type	VP										
Pres Type	E, I										
Example Volatiles by 8200	TPH	BTEX	Chloride								
# Cont											

Preservative Type Codes	
A. None	E. HCL
B. HNO ₃	F. MeOH
H ₂ SO ₄	G. Na ₂ S ₂ O ₃
D. NaOH	H. NaHSO ₄
	I. Asbc Acid&NaOH
	J. MCAA
	K. ZnAc&NaOH
	L. Asbc Acid&NaOH
	O.

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

Reg. Program / Clean-up Std				STATE for Certs & Regs				QA/QC Level & Certification				EDDs		COC & Labels		Coolers Temp °C		Lab Use Only													
CTLs	TRRP	DW	NPDES	LPST	DryCin	FL	TX	GA	NC	SC	NJ	PA	OK	LA	1	2	3	4	CLP	AFCEE	QAPP	ADAPT	SEDD	ERPIMS	Match	Incomplete	17.2	2	3	Non-Conformances found?	
Other:						AL	NM	Other:							NELAC	DoD-ELAP	Other:					XLS	Other:	Absent	Unclear					Samples intact upon arrival?	
Relinquished by				Affiliation				Date		Time		Received by		Affiliation		Date		Time												Received on Wet Ice?	
1				Basin Env				2-6-13		16:30		KB Butler		MS		2/6/13		2:58 PM										Labeled with proper preservatives?			
2												Shaunee Mink		XENCO		2/8/13		13:36										Received within holding time?			
3																														Custody seals intact?	
4																														VOCs rec'd w/o headspace?	
																														Proper containers used?	
																														pH verified-acceptable, excl VOCs?	
																														Received on time to meet HTs?	

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

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

C.O.C. Serial #

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



Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 02/08/2013 01:36:00 PM

Work Order #: 457296

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?	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)?	Yes
#21 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ?	Yes
#22 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	Yes

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

Analyst:	PH Device/Lot#:
----------	-----------------

Checklist completed by:

Date: _____

Checklist reviewed by:

Date: _____

Analytical Report 461617

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo
Ballard Grayburg 5" SRS # 2004-00192

26-APR-13

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

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-APR-13

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

Reference: XENCO Report No(s): **461617**
Ballard Grayburg 5" SRS # 2004-00192
Project Address: Lovington

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) 461617. 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. 461617 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

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Sample Cross Reference 461617



PLAINS ALL AMERICAN EH&S, Midland, TX

Ballard Grayburg 5" SRS # 2004-00192

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-2	W	04-18-13 13:30		461617-001
MW-3	W	04-18-13 13:35		461617-002



CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Ballard Grayburg 5" SRS # 2004-00192



Project ID:
Work Order Number(s): 461617

Report Date: 26-APR-13
Date Received: 04/18/2013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 461617

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Ballard Grayburg 5" SRS # 2004-00192



Project Id:

Contact: Ben Arguijo

Project Location: Lovington

Date Received in Lab: Thu Apr-18-13 03:35 pm

Report Date: 26-APR-13

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	461617-001	461617-002				
	<i>Field Id:</i>	MW-2	MW-3				
	<i>Depth:</i>						
	<i>Matrix:</i>	WATER	WATER				
	<i>Sampled:</i>	Apr-18-13 13:30	Apr-18-13 13:35				
BTEX by EPA 8021B	<i>Extracted:</i>	Apr-25-13 13:30	Apr-25-13 13:30				
	<i>Analyzed:</i>	Apr-25-13 14:20	Apr-25-13 14:36				
	<i>Units/RL:</i>	mg/L RL	mg/L RL				
Benzene		ND 0.00100	0.0181 0.00100				
Toluene		ND 0.00200	0.00319 0.00200				
Ethylbenzene		ND 0.00100	ND 0.00100				
m_p-Xylenes		ND 0.00200	ND 0.00200				
o-Xylene		ND 0.00100	0.00391 0.00100				
Total Xylenes		ND 0.00100	0.00391 0.00100				
Total BTEX		ND 0.00100	0.0252 0.00100				

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

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

Version: 1.0%

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 **SQL** 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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 9701 Harry Hines Blvd, Dallas, TX 75220
 5332 Blackberry Drive, San Antonio TX 78238
 2505 North Falkenburg Rd, Tampa, FL 33619
 12600 West I-20 East, Odessa, TX 79765
 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: Ballard Grayburg 5" SRS # 2004-00192

Work Orders : 461617,

Project ID:

Lab Batch #: 912241

Sample: 461617-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 04/25/13 14:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 912241

Sample: 461617-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 04/25/13 14:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Lab Batch #: 912241

Sample: 637142-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 04/25/13 14:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0334	0.0300	111	80-120	

Lab Batch #: 912241

Sample: 637142-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 04/25/13 13:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 912241

Sample: 637142-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 04/25/13 13:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0327	0.0300	109	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	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: Ballard Grayburg 5" SRS # 2004-00192

Work Orders : 461617,

Project ID:

Lab Batch #: 912241

Sample: 461617-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 04/25/13 15:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: Ballard Grayburg 5" SRS # 2004-00192

Work Order #: 461617

Analyst: DYV

Date Prepared: 04/25/2013

Project ID:

Date Analyzed: 04/25/2013

Lab Batch ID: 912241

Sample: 637142-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.103	103	0.100	0.112	112	8	70-125	25	
Toluene	<0.00200	0.100	0.108	108	0.100	0.115	115	6	70-125	25	
Ethylbenzene	<0.00100	0.100	0.100	100	0.100	0.128	128	25	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.199	100	0.200	0.230	115	14	70-131	25	
o-Xylene	<0.00100	0.100	0.104	104	0.100	0.112	112	7	71-133	25	

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: Ballard Grayburg 5" SRS # 2004-00192

Work Order #: 461617

Lab Batch #: 912241

Date Analyzed: 04/25/2013

Date Prepared: 04/25/2013

Project ID:

Analyst: DYV

QC- Sample ID: 461617-001 S

Batch #: 1

Matrix: Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

BTEX by EPA 8021B		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes							
Benzene		<0.00100	0.100	0.0962	96	70-125	
Toluene		<0.00200	0.100	0.0980	98	70-125	
Ethylbenzene		<0.00100	0.100	0.107	107	71-129	
m_p-Xylenes		<0.00200	0.200	0.195	98	70-131	
o-Xylene		<0.00100	0.100	0.0951	95	71-133	

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

Relative Percent Difference [E] = $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



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
Hobbs: 4008 N Grimes Hobbs, NM 88240 (575)392-7550

Page 1 of 1

LAB W.O #: 461611

Field billable Hrs :

TAT Work Days = D Need results by: Time:

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

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 Ice
B. HNO₃ F. MeOH J. MCAA C.
H₂SO₄ G. Na₂S₂O₃ K. ZnAc&NaOH
D. NaOH H. NaHSO₄ 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

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: Ballard Grayburg 5" SRS #2004-00192 PO#: PAA-J. Henry
Invoice To: Jason Henry Plains All American Quote #:

Sampler Signature: Ashma Smith
Circle One Event: Daily Weekly Monthly Quarterly
Semi-Annual Annual N/A

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code	Field Fillage	Integrity	PK (ML)	Sealing	Container
1	MW-2	4/18/13	13:30	GW				3	
2	MW-3	4/18/13	13:35	GW				3	
3									
4									
5									
6									
7									
8									
9									
0									

Reg. Program / Clean-up Std STATE for Certs & Regs CAV/QC Level & Certification EDDs GOC & Labels Coolers Temp °C Lab Use Only
CTLs 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 1952 310
Other: AL NM Other: NELAC DoD-ELAP Other: XLS Other: Absent Unclear

Relinquished by: Ashma Smith Affiliation: Basin Date: 4/18/13 Time: 13:34
Received by: M S Affiliation: Xenco Date: 4-19-13 Time: 11:20

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



Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 04/18/2013 03:35:00 PM

Work Order #: 461617

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)?	1
#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)?	Yes
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes
#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: 04/23/2013

Checklist reviewed by:


Kelsey Brooks

Date: 04/26/2013

Analytical Report 469385

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo
Ballard Graburg 5"

09-SEP-13

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-13-14-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

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)

09-SEP-13

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

Reference: XENCO Report No(s): **469385**
Ballard Graburg 5"
Project Address: Lovington NM

Ben Arguijo:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 469385. 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. 469385 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

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Sample Cross Reference 469385



PLAINS ALL AMERICAN EH&S, Midland, TX

Ballard Graburg 5"

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-3	W	08-23-13 14:00		469385-001



CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Ballard Graburg 5''

Project ID:

Work Order Number(s): 469385

Report Date: 09-SEP-13

Date Received: 08/28/2013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 469385

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id:

Contact: Ben Arguijo

Project Name: Ballard Graburg 5"

Date Received in Lab: Wed Aug-28-13 02:35 pm

Report Date: 09-SEP-13

Project Location: Lovington NM

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	469385-001					
	<i>Field Id:</i>	MW-3					
	<i>Depth:</i>						
	<i>Matrix:</i>	WATER					
	<i>Sampled:</i>	Aug-23-13 14:00					
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-04-13 09:00					
	<i>Analyzed:</i>	Sep-04-13 11:30					
	<i>Units/RL:</i>	mg/L RL					
Benzene		0.00179 0.00100					
Toluene		ND 0.00200					
Ethylbenzene		ND 0.00100					
m_p-Xylenes		ND 0.00200					
o-Xylene		ND 0.00100					
Total Xylenes		ND 0.00100					
Total BTEX		0.00179 0.00100					

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

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Kelsey Brooks
Project Manager

- 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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 2505 North Falkenburg Rd, Tampa, FL 33619
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 6017 Financial Drive, Norcross, GA 30071
 3725 E. Atlanta Ave, Phoenix, AZ 85040

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(281) 240-4200	(281) 240-4280
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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: Ballard Graburg 5"

Work Orders : 469385, 469385

Project ID:

Lab Batch #: 922181

Sample: 469385-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/04/13 11:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 922181

Sample: 643503-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/04/13 10:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0334	0.0300	111	80-120	
4-Bromofluorobenzene	0.0247	0.0300	82	80-120	

Lab Batch #: 922181

Sample: 643503-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/04/13 09:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0245	0.0300	82	80-120	

Lab Batch #: 922181

Sample: 643503-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/04/13 10:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0260	0.0300	87	80-120	

Lab Batch #: 922181

Sample: 469494-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/04/13 13:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0246	0.0300	82	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: Ballard Graburg 5"

Work Orders : 469385, 469385

Project ID:

Lab Batch #: 922181

Sample: 469494-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/04/13 14:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0249	0.0300	83	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: Ballard Graburg 5"

Work Order #: 469385, 469385

Analyst: KEB

Date Prepared: 09/04/2013

Project ID:

Date Analyzed: 09/04/2013

Lab Batch ID: 922181

Sample: 643503-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.108	108	0.100	0.118	118	9	70-125	25	
Toluene	<0.00200	0.100	0.100	100	0.100	0.108	108	8	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0944	94	0.100	0.101	101	7	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.185	93	0.200	0.199	100	7	70-131	25	
o-Xylene	<0.00100	0.100	0.0925	93	0.100	0.0996	100	7	71-133	25	

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: Ballard Graburg 5"

Work Order # : 469385

Project ID:

Lab Batch ID: 922181

QC- Sample ID: 469494-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 09/04/2013

Date Prepared: 09/04/2013

Analyst: KEB

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.117	117	0.100	0.114	114	3	70-125	25	
Toluene	<0.00200	0.100	0.107	107	0.100	0.103	103	4	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0999	100	0.100	0.0965	97	3	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.195	98	0.200	0.189	95	3	70-131	25	
o-Xylene	<0.00100	0.100	0.0976	98	0.100	0.0947	95	3	71-133	25	

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

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

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

CHAIN OF CUSTODY RECORD



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 08/28/2013 02:35:00 PM

Work Order #: 469385

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)?	3.5
#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)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes
#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: 08/28/2013

Checklist reviewed by:

Kelsey Brooks

Date: 08/28/2013

Analytical Report 474183

for

PLAINS ALL AMERICAN EH&S

Project Manager: Ben Arguijo

Ballard Grayburg 5"

SRS#2004-00192

22-NOV-13

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-13-15-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

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)



22-NOV-13

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

Reference: XENCO Report No(s): **474183**
Ballard Grayburg 5"
Project Address: New Mexico

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) 474183. 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. 474183 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

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Sample Cross Reference 474183



PLAINS ALL AMERICAN EH&S, Midland, TX

Ballard Grayburg 5"

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-3	W	11-15-13 09:30		474183-001



CASE NARRATIVE



Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Ballard Grayburg 5"

Project ID: SRS#2004-00192
Work Order Number(s): 474183

Report Date: 22-NOV-13
Date Received: 11/15/2013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 474183

PLAINS ALL AMERICAN EH&S, Midland, TX



Project Id: SRS#2004-00192

Contact: Ben Arguijo

Project Name: Ballard Grayburg 5"

Date Received in Lab: Fri Nov-15-13 03:02 pm

Report Date: 22-NOV-13

Project Location: New Mexico

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	474183-001					
	Field Id:	MW-3					
	Depth:						
	Matrix:	WATER					
	Sampled:	Nov-15-13 09:30					
BTEX by EPA 8021	Extracted:	Nov-21-13 15:00					
	Analyzed:	Nov-22-13 00:03					
	Units/RL:	mg/L RL					
Benzene		0.00100 0.00100					
Toluene		ND 0.00200					
Ethylbenzene		ND 0.00100					
m_p-Xylenes		ND 0.00200					
o-Xylene		ND 0.00100					
Xylenes, Total		ND 0.00100					
Total BTEX		0.00100 0.00100					

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

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Kelsey Brooks
Project Manager

- 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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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: Ballard Grayburg 5"

Work Orders : 474183,

Lab Batch #: 928301

Sample: 474183-001 / SMP

Project ID: SRS#2004-00192

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/22/13 00:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 928301

Sample: 647366-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/21/13 18:06

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

Lab Batch #: 928301

Sample: 647366-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/21/13 16:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 928301

Sample: 647366-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/21/13 17:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 928301

Sample: 474260-017 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/21/13 17:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: Ballard Grayburg 5"

Work Orders : 474183,

Lab Batch #: 928301

Sample: 474260-017 SD / MSD

Project ID: SRS#2004-00192

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/21/13 17:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0327	0.0300	109	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



BS / BSD Recoveries



Project Name: Ballard Grayburg 5"

Work Order #: 474183

Project ID: SRS#2004-00192

Analyst: ARM

Date Prepared: 11/21/2013

Date Analyzed: 11/21/2013

Lab Batch ID: 928301

Sample: 647366-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

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	0.0937	94	0.100	0.0936	94	0	70-125	25	
Toluene	<0.00200	0.100	0.0966	97	0.100	0.0964	96	0	70-125	25	
Ethylbenzene	<0.00100	0.100	0.105	105	0.100	0.104	104	1	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.213	107	0.200	0.212	106	0	70-131	25	
o-Xylene	<0.00100	0.100	0.106	106	0.100	0.107	107	1	71-133	25	

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: Ballard Grayburg 5"

Work Order # : 474183

Project ID: SRS#2004-00192

Lab Batch ID: 928301

QC- Sample ID: 474260-017 S

Batch #: 1 Matrix: Water

Date Analyzed: 11/21/2013

Date Prepared: 11/21/2013

Analyst: ARM

Reporting Units: mg/L

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	<0.00100	0.100	0.0963	96	0.100	0.0984	98	2	70-125	25	
Toluene	<0.00200	0.100	0.0994	99	0.100	0.103	103	4	70-125	25	
Ethylbenzene	<0.00100	0.100	0.108	108	0.100	0.113	113	5	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.220	110	0.200	0.229	115	4	70-131	25	
o-Xylene	<0.00100	0.100	0.110	110	0.100	0.114	114	4	71-133	25	

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: 11/15/2013 03:02:00 PM

Work Order #: 474183

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)?	Yes
#21 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ?	Yes
#22 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	N/A

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

Analyst:	PH Device/Lot#:
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Checklist completed by:

Candace James

Date: 11/18/2013

Checklist reviewed by:

Kelsey Brooks

Date: 11/18/2013



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 11/15/2013 03:02:00 PM

Work Order #: 474183

Acceptable Temperature Range: 0 - 6 degC

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

Analyst:	PH Device/Lot#:
----------	-----------------

Checklist completed by:

Candace James

Candace James

Date: 11/18/2013

Checklist reviewed by:

Kelsey Brooks

Kelsey Brooks

Date: 11/18/2013

Appendix B
Release Notification &
Corrective Action (Form C-141)

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

x Initial Report ☐ Final Report

Name of Company Plains Marketing, LP	Contact Camille Reynolds
Address 5805 East Hwy. 80, Midland, TX 79706	Telephone No. 505-441-0965
Facility Name Ballard Greyburg 5" #2	Facility Type 5" Steel Pipeline

Surface Owner BLM	Mineral Owner	Lease No.
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LOCATION OF RELEASE

Unit Letter M	Section 10	Township 18S	Range 29E	Feet from the	North/South Line	Feet from the	East/West Line	County Eddy
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Latitude 32°45'27.1" Longitude 104°04'12.0"

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release 80 barrels	Volume Recovered 0 barrels
Source of Release 5" Steel Pipeline	Date and Hour of Occurrence 9-2-04 @ 06:00	Date and Hour of Discovery 9-2-04 @ 08:45
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Van Barton	
By Whom? Ken Dutton	Date and Hour 9-2-04 @ 14:32	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* External corrosion of the 5" steel pipeline. A line clamp was installed to mitigate the release. The line is a 5-inch steel gathering line that produces approximately 95 barrels of crude per day. The pressure on the line varies from 50 to 70 psi and the gravity of the sour crude oil is 39. The sour crude has an H₂S content of 20 ppm

Describe Area Affected and Cleanup Action Taken.* The impacted soil was excavated and stockpiled on plastic. Aerial extent of surface impact was 10 x 6 feet, subsequent excavation of impacted soil resulted in an area of approximately 22 x 23 x 13 feet.

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.

OIL CONSERVATION DIVISION

Signature: <i>Camille Reynolds</i>	Approved by District Supervisor:	
Printed Name: Camille Reynolds	Approval Date:	Expiration Date:
Title: Remediation Coordinator	Conditions of Approval:	
E-mail Address: cjreynolds@paalp.com	Attached <input type="checkbox"/>	
Date: 9-7-04	Phone: 505-441-0965	

* Attach Additional Sheets If Necessary