1R - 120

REPORTS

DATE:

June, 2009

SOIL CLOSURE EVALUATION REPORT

TNM - MONUMENT 11

LEA COUNTY, NEW MEXICO
SE ¼ NE ¼ SECTION 30, TOWNSHIP 19 SOUTH, RANGE 37 EAST
PLAINS SRS NUMBER: TNM MONUMENT-11
NMOCD REFERENCE NUMBER 1R-120

Prepared For:

PLAINS MARKETING, L.P.
333 CLAY STREET, SUITE 1600
HOUSTON, TEXAS 77002

NOVA
safety and environmental

Prepared By:

NOVA Safety and Environmental
2057 Commerce Street
Midland, Texas 79703

June 2009

Ronald K. Rounsaville
Senior Project Manager

Brittan K. Byerly, P.G.
President

TABLE OF CONTENTS

1.0 INTRODUCTION

On behalf of Plains Marketing, L.P., (Plains), NOVA Safety and Environmental (NOVA) is pleased to submit this Soil Evaluation Closure Report for the site known as TNM-Monument 11 (Monument 11). The purpose of this Soil Evaluation Closure Report (Closure Report) is to summarize known soil data and to demonstrate that contaminants-of-concern (COCs) in the soils at the site are reducing over time and demonstratably immobile. A Site Location Map and Site Map are provided as Figure 1 and Figure 2, respectively. The site is located in the SE ¼ NE ¼ Section 30, Township 19 South, Range 37 East, Lea County, New Mexico.

2.0 SITE BACKGROUND

This release occurred while the pipeline was operated by Texas New Mexico Pipe Line Company (TNM). No information with respect to the release date, volume of crude oil released and recovered, excavation dimensions or pipeline repair is currently available. Previous work identified three hydrocarbon stained areas at the release area, which were documented on early site maps. It is our understanding that impacted soils from the source area were excavated and disposed off-site, however, documentation as to the exact volume of soil removed could not be located. A total of ten soil borings and six monitor wells have been installed at the site to delineate the extent of soil and groundwater impacts prior to the development of this Closure Report. Groundwater monitoring and sampling has been conducted at the site since August 1999. As of the end of 2008, Plains had a minimum of fourteen consecutive quarters of groundwater monitoring analytical data below New Mexico Oil Conservation Division (NMOCD) regulatory guidelines. On April 20, 2009, The NMOCD approved a request for groundwater closure for the groundwater investigation and remediation activities associated with the Monument 11 Site.

3.0 NMOCD SITE CLASSIFICATION

Groundwater at this site occurs at approximately 23 to 26 feet below ground surface (bgs). This depth to groundwater results in a score of 20 being assigned to this site based on the NMOCD ranking criteria. The distance to the nearest water source exceeds 1,000 feet, resulting in no points being assigned to the site on this ranking criterion. There is no surface water body located with 1,000 feet of the site, resulting in no points being assigned on this ranking criterion.

The NMOCD's *Guidelines for Remediation of Leaks, Spills and Releases* (NMOCD, 1993), indicates the Monument 11 Site has a ranking score of 20 points. The soil cleanup levels for a site with a ranking score greater than 19 require benzene concentrations below 10 parts per million (ppm), total Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) below 50 ppm and Total Petroleum Hydrocarbons – Gasoline Range Organics/Diesel Range Organics (TPH-GRO/DRO) below 100 ppm.

4.0 LEAK ZONE INVESTIGATION

4.1 Review of Soil Data

An initial site investigation was conducted in January of 1998 by previous contractors and consisted of the installation and sampling of nine soil borings (soil borings B11-1 through B11-9). The soil borings were advanced from 12 to 17 feet below ground surface (bgs). Groundwater was not reported in the initial nine soil borings. Analytical data collected from soil borings B11-1 through B11-9 indicated that hydrocarbon impact exceeded NMOCD cleanup standards in soil borings B11-2 (9,780 mg/Kg Total Petroleum Hydrocarbons (TPH)) at 5-7 feet bgs and (9,920 mg/Kg TPH) at 10-12 feet bgs, B11-8 (106 mg/Kg TPH) at 10-12 feet bgs, and in B11-9 (109 mg/Kg TPH) at 5-7 feet bgs. A tenth soil boring, soil boring B11-10, was placed near soil boring B11-2 to a total depth of 23 feet bgs. Soil boring B11-10 confirmed the analytical results found in soil boring B11-2, and encountered contamination of the groundwater below the site. Please refer to Table 1 for soil analytical results. Please refer to Figure 3 for historic TPH distributions at the Monument 11 Site.

Based upon the data collected in the ten soil borings, four groundwater monitor wells (MW-1 through MW-4) were installed in August 1999 by a previous consultant. During installation of the four monitor wells, only monitor well MW-4 encountered soil hydrocarbon impact above NMOCD cleanup standards (samples collected in monitor well MW-4 from 13-15 feet bgs (2,440 mg/Kg DRO TPH) and 23-25 feet bgs (720 mg/Kg DRO TPH)). Please note that Gasoline Range Organics (GRO) TPH was not analyzed on the initial ten soil borings or monitor wells MW-1 through MW-4.

On November 3, 2004, two additional monitor wells were installed on the up gradient side of the impact zone to further delineate the extent of groundwater impact at the site. During installation of monitor wells MW-5 and MW-6, soil samples were collected at 10 feet and 18 feet bgs in monitor well MW-5 and at 10, 20, and 40 feet bgs in monitor well MW-6. Analytical results of the five soil samples indicated that BTEX had degraded or were absent in the intervals tested. The GRO and DRO TPH were below detection limits in all five soil samples. A total of six groundwater monitor wells (MW-1 through MW-6) are currently on-site. A Site Map illustrating site details is provided as Figure 2.

On August 15, 2007, four confirmation soil borings were advanced pursuant to the approved NMOCD workplan for the purpose of evaluating the BTEX and TPH concentrations in soil in and adjacent to the source area. The soil borings were completed to a depth of 18 feet bgs and were located in the vicinity of soil borings SB B11-2, SB B11-10 and MW-4. Analytical results on samples collected from soil borings SB-1 @ 18 ft. in 2007, located adjacent to monitor well MW-4, indicated a total TPH concentration of 1.97 mg/Kg as compared to the 1999 total TPH concentration of 2,440 mg/Kg from samples collected from MW-4. Soil analytical results from soil boring SB-2 @ 10 ft. and 18 ft. in 2007 exhibited total TPH concentrations of 1,119 mg/Kg and 218.9 mg/Kg, respectively. Soil analytical results from soil boring SB-3 @ 10 ft. and 18 ft. in 2007 exhibited total TPH concentrations of 4.21 mg/Kg and 2.34 mg/Kg, respectively. Soil

analytical results from soil boring SB-4 @ 18 ft. in 2007 exhibited a total TPH concentration of <50.0 mg/Kg.

Based upon the analytical data collected from soil boring SB-2 and comparing soil analytical data collected from soil borings SB B11-2, SB B11-10 and MW-4 conducted in 1998 and 1999, remaining hydrocarbon impact appears to be declining naturally (decreased from over 9,900 mg/Kg TPH to 1,119 mg/Kg TPH in approximately eight years) and is demonstratably immobile.

4.2 Review of Site and Data by the New Mexico State Land Office

On May 12, 2009, representatives with Plains and NOVA met with Ms. Myra Harrison of the New Mexico State Land Office (NMSLO) to discuss current site conditions and site data. Ms. Harrison agreed with the plan for closure and stated that the NMSLO would not object to closure of the site if the NMOCD concurred with this request by Plains.

4.3 Review of Groundwater Data

Review of laboratory analytical results of the groundwater samples obtained from the six site monitoring wells since 1999 indicate that benzene and total BTEX constituent concentrations have been below NMOCD regulatory standards for a minimum of fourteen consecutive quarters. On April 20, 2009, The NMOCD approved a request for groundwater closure for all groundwater remediation activities at the site. The lack of groundwater contamination associated with the remaining hydrocarbons in the vadose zone indicates that the hydrocarbon is not mobile and is no longer a threat to water quality. Six groundwater monitor wells (MW-1 through MW-6) were properly plugged and abandoned on June 9, 2009.

5.0 CONCLUSIONS

The crude oil release known as TNM-Monument 11, to the best of our knowledge, occurred in late 1997 or early 1998 with an undetermined volume of crude released to the subsurface. Since 1999, approximately 20 soil borings have been advanced at the site with 6 converted into monitoring wells. Groundwater monitoring has been conducted at the site since August 1999 on six monitoring wells (MW-1 through MW-6).

Based on the soil analytical data from the 2007 soil confirmation activities which confirmed declining TPH concentrations in the soils within the source area due to natural attenuation, Plains requests the New Mexico Oil Conservation Division (NMOCD) grant closure for the soil remediation activities at the TNM-Monument 11 Site.

6.0 LIMITATIONS

NOVA has prepared this Soil Investigation Work Plan to the best of its ability. No other warranty, expressed or implied, is made or intended. NOVA has examined and relied upon documents referenced in the report and has relied on oral statements made by

certain individuals. NOVA has not conducted an independent examination of the facts contained in referenced materials and statements. We have presumed the genuineness of the documents and that the information provided in documents or statements is true and accurate. NOVA has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. NOVA also 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. The information contained in this report including all exhibits and attachments may not be used by any other party without the express written consent of NOVA and/or Plains.

7.0 DISTRIBUTION

Copy 1: Ed Hansen
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Copy 2: Larry Johnson
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, District 1
1625 French Drive
Hobbs, NM 88240

Copy 3: Jason Henry
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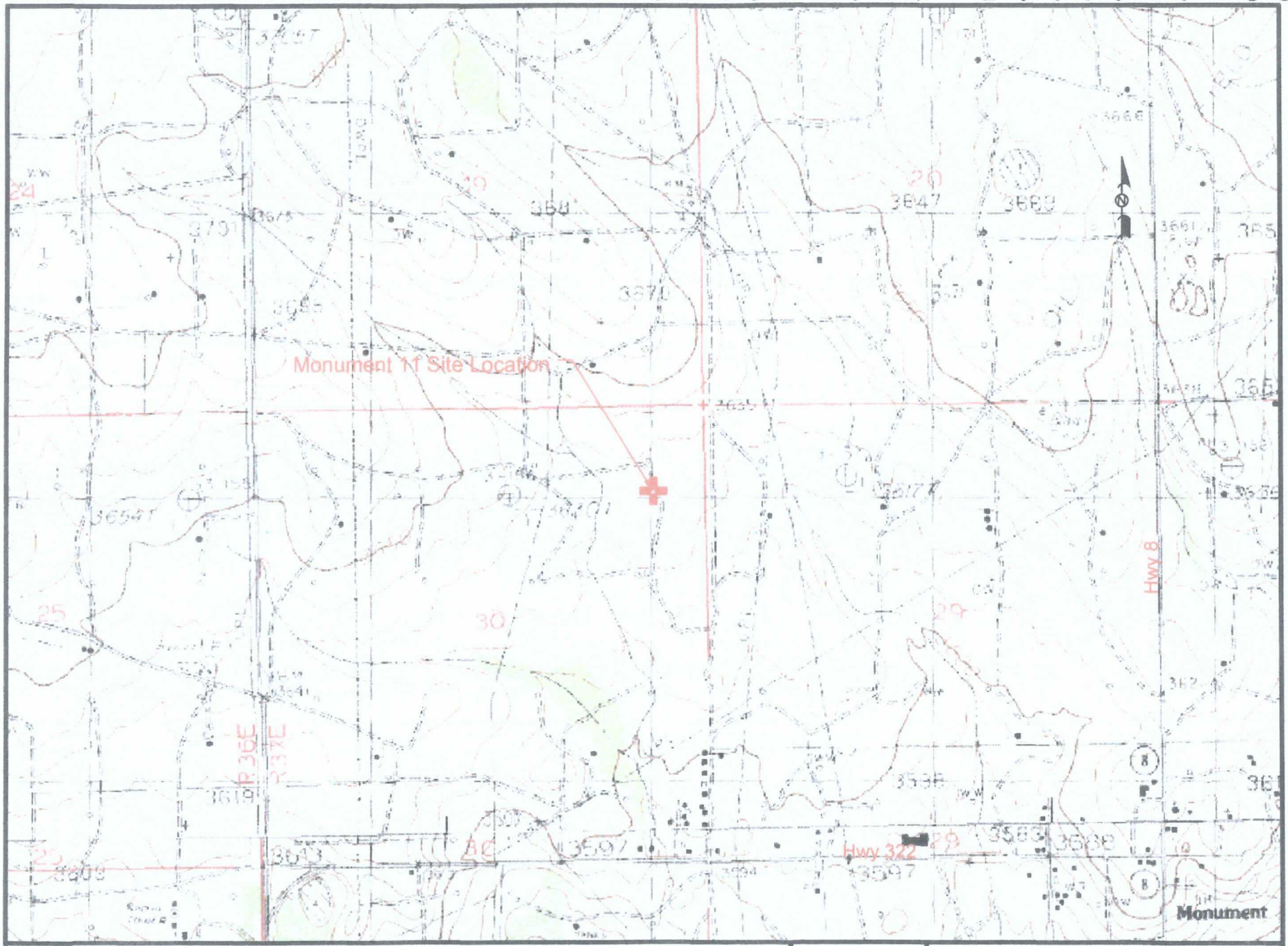
Houston, TX 77002
jpdann@paalp.com

Copy 5: NOVA Safety and Environmental
2057 Commerce Street
Midland, TX 79703
rrounsaville@novatraining.cc

FIGURES



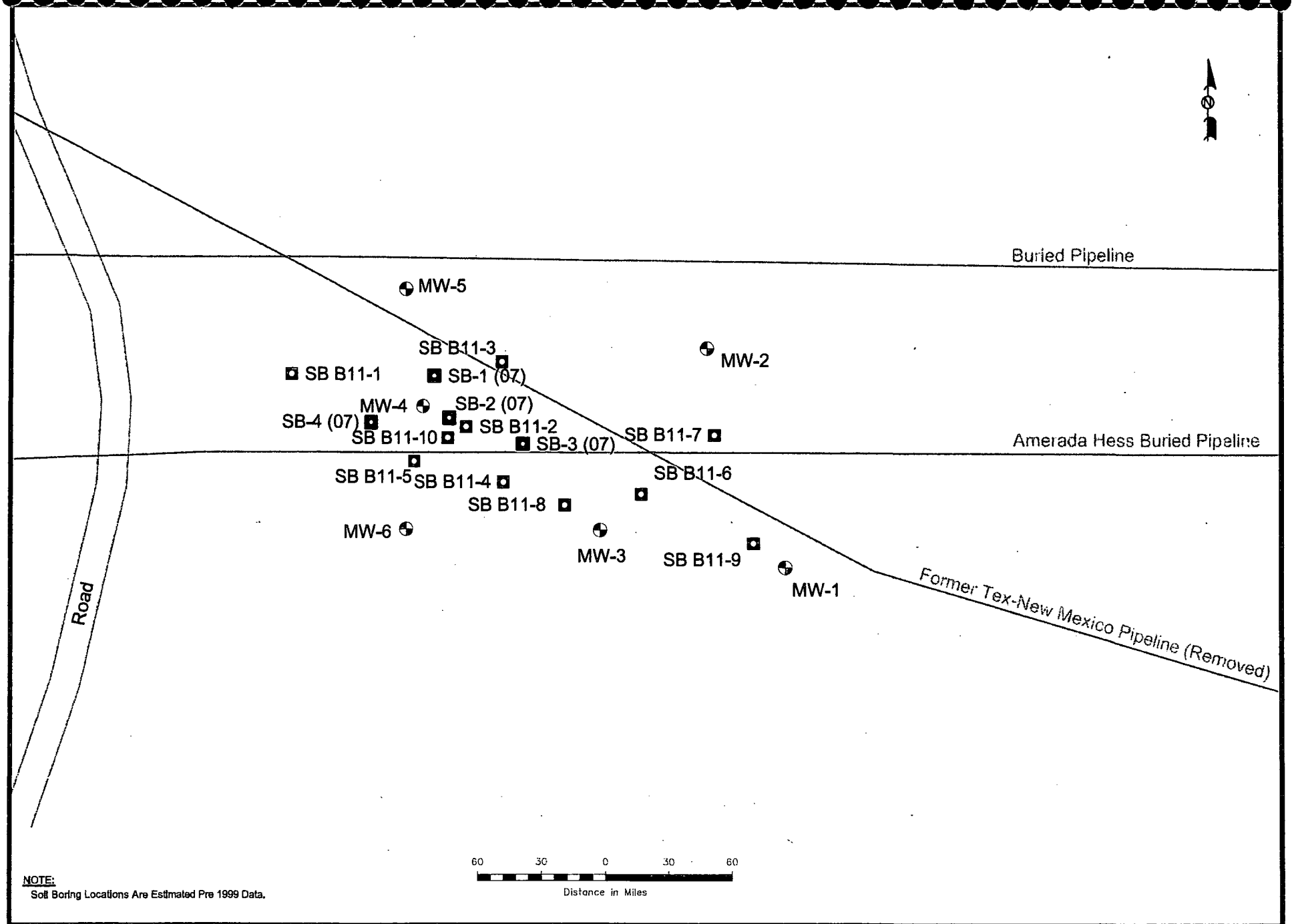
1500 750 0 750 1500

Distance in Feet

Figure 1
Site Location Map
Plains Marketing, L.P.
Monument 11
Lea County, NM
NMOCD Ref. # 1R-0120

NOVA Safety and Environmental

Scale: 1" = 1500'	Prep By: CDS	Checked By: CDS
March 24, 2008	SW 1/4 NE 1/4 Sec. 30 T19S R37E	
	Lat. N32° 38' 9.2" Long. W103° 17' 2.4"	



NOTE:
Soil Boring Locations Are Estimated Pre 1999 Data.

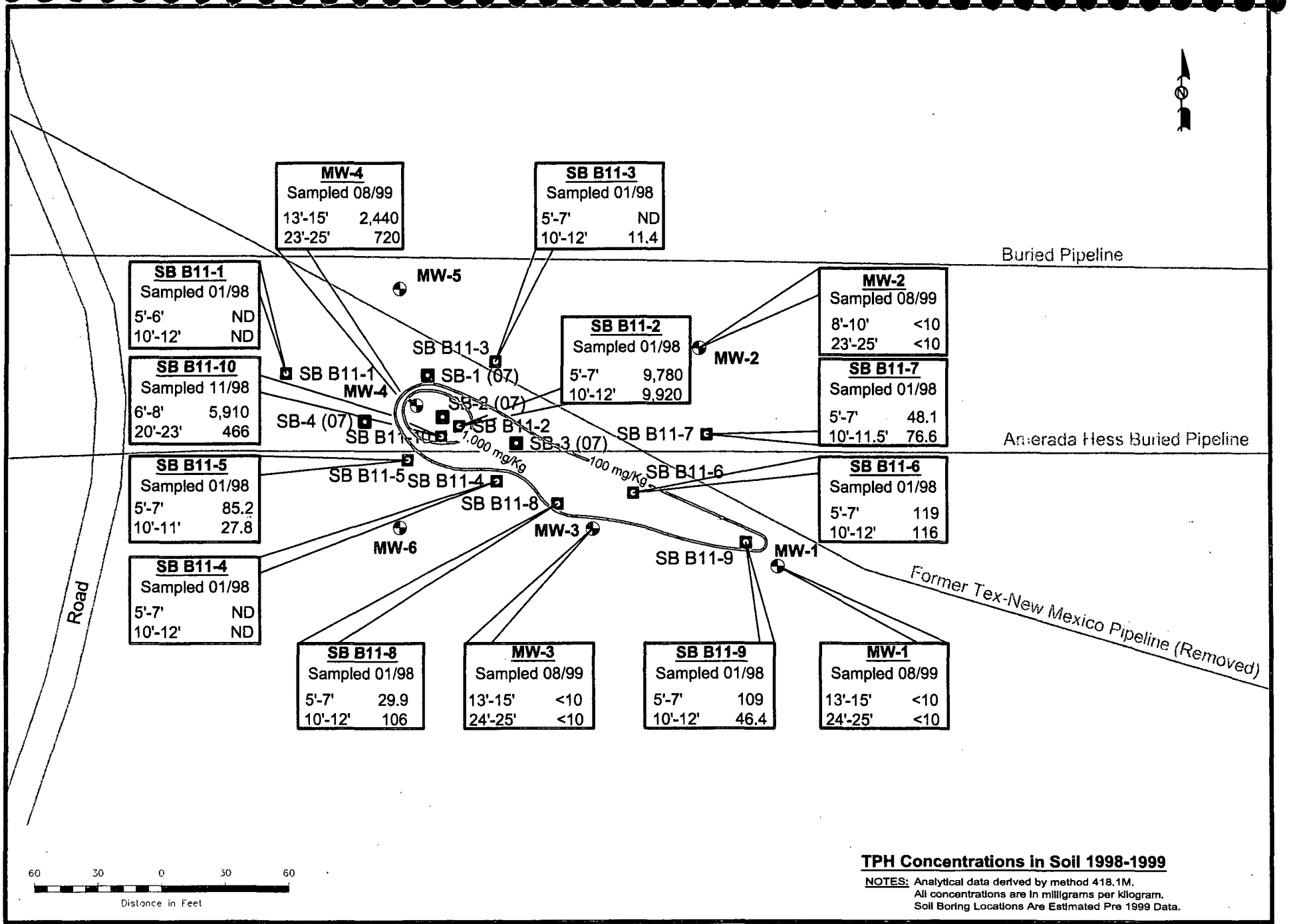
LEGEND:
- Monitor Well Location
- Soil Boring Location
- Pipeline

Figure 2
Site Map

Plains Pipeline, L.P.
Monument 11
Lea County, NM

NOVA Safety and Environmental

Scale: 1" = 60'	Prep By: DPM	Checked By: BB
February 21, 2006	NE1/4 Section 30 T19S R37E	
	Lat. N32° 38' 14" Long. W103° 17' 4"	



TPH Concentrations in Soil 1998-1999

NOTES: Analytical data derived by method 418.1M.
All concentrations are in milligrams per kilogram.
Soil Boring Locations Are Estimated Pre 1999 Data.

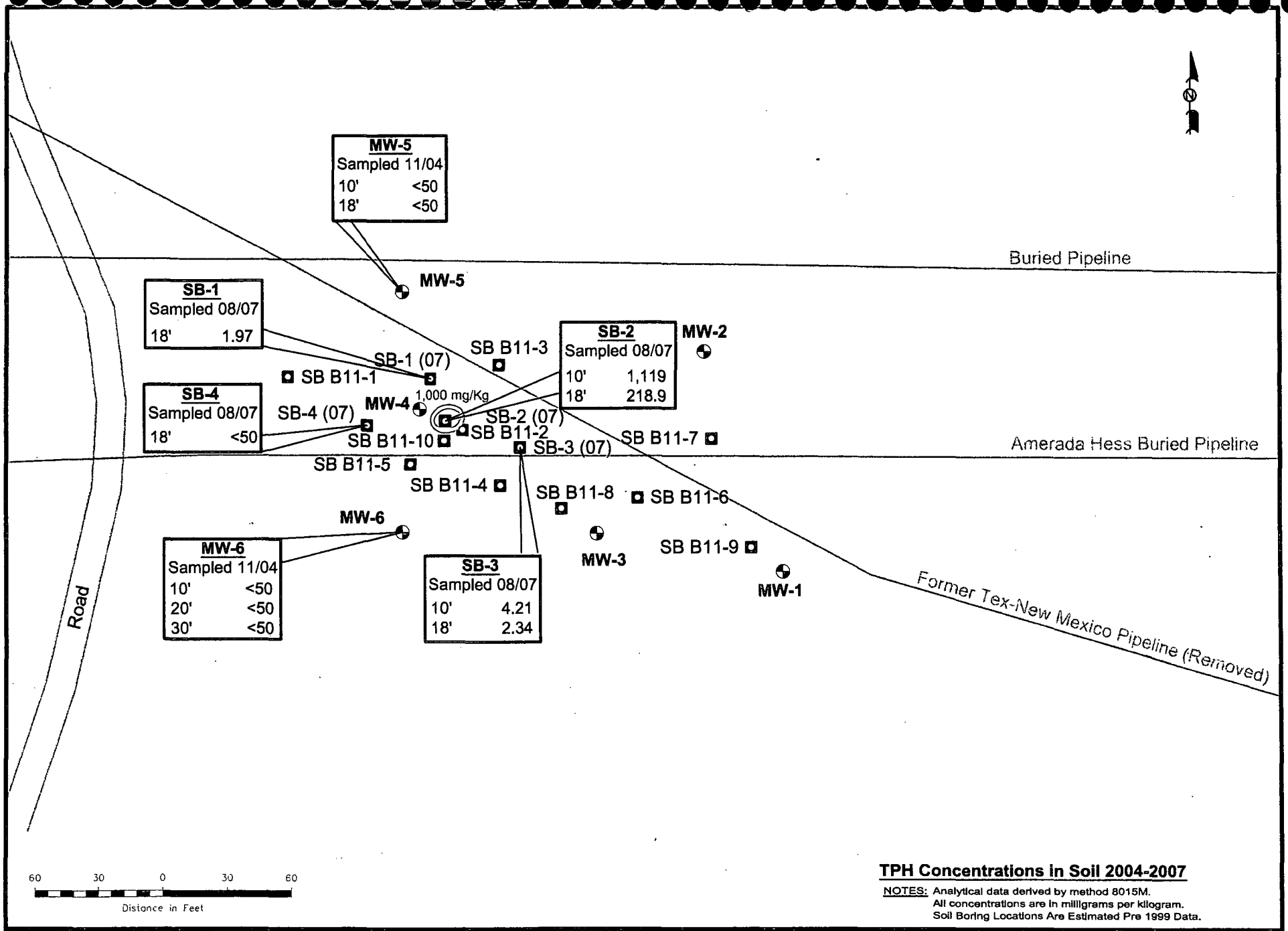
Legend:
- Monitor Well Location
- Pipeline
- 5,910 TPH Concentration (mg/Kg)
- 8' TPH Concentration Depth
- TPH Concentration Contour (mg/Kg)

Figure 3
TPH Concentrations in Soil 1998-1999

Plains Marketing, L.P.
Monument 11
Lea County, NM

NOVA Safety and Environmental

Scale: 1" = 60'	Prep By: SAT	Checked By: RKR
June 17, 2009	SE 1/4 NE 1/4 Sec 30 T19S R37E	
	32° 38' 07.2" N 103° 16' 58.0" W	



TPH Concentrations in Soil 2004-2007

NOTES: Analytical data derived by method 8015M.
All concentrations are in milligrams per kilogram.
Soil Boring Locations Are Estimated Pre 1999 Data.

Legend:

- Monitor Well Location
- Pipeline
- 5,910 TPH Concentration (mg/Kg)
- 8' TPH Concentration Depth
- TPH Concentration Contour (mg/Kg)

Figure 4
TPH Concentrations In Soil 2004-2007

Plains Marketing, L.P.
Monument 11
Lea County, NM

NOVA Safety and Environmental

Scale: 1" = 60'	Prep By: SAT	Checked By: RKR
June 17, 2009	SE 1/4 NE 1/4 Sec 30 T19S R37E	
	32° 38' 07.2" N 103° 16' 58.0" W	

TABLES

Table 1

CONCENTRATIONS OF TPH AND BTEX IN SOIL

PLAINS MARKETING, L.P.
Monument 11
MONUMENT (LEA COUNTY), NEW MEXICO

All concentrations are reported in mg/Kg

SAMPLE LOCATION	SAMPLE DATE	DEPTH (feet)	8015M			418.1	SW 846-8021B, 5030				
			GRO C6-C12	DRO >C12-C35	TOTAL C6-C35	TPH (mg/kg)	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	TOTAL BTEX
B11-1	01/21/98	5-6				ND	ND	ND	ND	ND	ND
B11-1		10-12				ND	ND	ND	ND	ND	ND
B11-2	01/21/98	5-7				9,780	1.04	0.68	2.91	5.76	10.39
B11-2		10-12				9,920	2.04	2.45	3.46	12.99	20.94
B11-3	01/21/98	5-7				ND	ND	ND	ND	0.053	0.053
B11-3		10-12				11.4	ND	ND	ND	ND	ND
B11-4	01/21/98	5-7				ND	ND	ND	ND	ND	ND
B11-4		10-12				ND	ND	ND	ND	ND	ND
B11-5	01/21/98	5-7				85.2	ND	ND	ND	ND	ND
B11-5		10-11				27.8	ND	ND	ND	ND	ND
B11-6	01/21/98	5-7				119	ND	ND	ND	ND	ND
B11-6		10-12				116	ND	ND	ND	ND	ND
B11-7	01/21/98	5-7				48.1	ND	ND	ND	ND	ND
B11-7		10-11.5				76.6	ND	ND	ND	ND	ND
B11-8	01/21/98	5-7				29.9	ND	ND	ND	ND	ND
B11-8		10-12				106	ND	ND	ND	ND	ND
B11-9	01/21/98	5-7				109	ND	ND	ND	ND	ND
B11-9		10-12				46.4	ND	ND	ND	ND	ND
B11-10	11/09/98	6-8				5,910	0.83	1.51	2.44	5.99	10.77
B11-10		20-23				466	0.76	0.46	0.68	17.71	3.61
MW-1	08/24/99	13-15		<10			<0.1	0.275	0.174	0.317	0.766
MW-1	08/24/99	24-25		<10			<0.1	<0.1	<0.1	<0.1	<0.1
MW-2	08/25/99	8-10		<10			<0.1	<0.1	<0.1	<0.1	<0.1
MW-2	08/25/99	23-25		<10			<0.1	<0.1	<0.1	<0.1	<0.1
MW-3	08/25/99	13-15		<10			<0.1	<0.1	<0.1	<0.1	<0.1
MW-3	08/25/99	24-25		<10			<0.1	<0.1	<0.1	<0.1	<0.1
MW-4	08/24/99	13-15		2,440			<0.1	0.653	0.704	5.7	7.057
MW-4	08/24/99	23-25		720			0.299	0.561	0.116	0.851	1.827
MW-5 10'	11/03/04		<50	<50	<50		<0.01	<0.01	<0.01	<0.01	<0.01
MW-5 18'	11/03/04		<50	<50	<50		<0.01	<0.01	<0.01	<0.01	<0.01
MW-6 10'	11/03/04		<50	<50	<50		<0.01	<0.01	<0.01	<0.01	<0.01
MW-6 20'	11/03/04		<50	<50	<50		<0.01	<0.01	<0.01	<0.01	<0.01
MW-6 40'	11/03/04		<50	<50	<50		<0.01	<0.01	<0.01	<0.01	<0.01
SB-1 @ 18'	08/15/07		<50.0	1.97	1.97		n/a	n/a	n/a	n/a	n/a
SB-2 @ 10'	08/15/07		908	211	1119		<0.01	<0.01	0.568	1.04	1.608
SB-2 @ 18'	08/15/07		166	52.9	218.9		n/a	n/a	n/a	n/a	n/a
SB-3 @ 10'	08/15/07		<50.0	4.21	4.21		n/a	n/a	n/a	n/a	n/a
SB-3 @ 18'	08/15/07		<50.0	2.34	2.34		n/a	n/a	n/a	n/a	n/a
SB-4 @ 18'	08/15/07		<50.0	<1.00	<50.0		n/a	n/a	n/a	n/a	n/a

ND - Non Detect
n/a - Not Analyzed

APPENDICES

APPENDIX A:
Notification of Release and 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, 200

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 Repo

Name of Company	Plains Pipeline, LP	Contact:	Camille Reynolds
Address:	3705 E. Hwy 158, Midland, TX 79706	Telephone No.	505-441-0965
Facility Name	Monument # 11	Facility Type:	Pipeline

Surface Owner:	Mineral Owner	Lease No.
New Mexico State Land Office		

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	30	19S	37E					Lea

Latitude 32 degrees 38' 9.2" **Longitude** 103 degrees 17' 2.4"

NATURE OF RELEASE

Type of Release: Unknown	Volume of Release: Unknown	Volume Recovered Unknown
Source of Release:	Date and Hour of Occurrence Unknown	Date and Hour of Discovery
Was Immediate Notice Given? Yes ☐ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Describe Area Affected and Cleanup Action Taken.*
NOTE: Texas-New Mexico Pipeline was the owner/operator of the pipeline system at the time of the release, initial response information is unavailable.

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 Reynolds	Approved by District Supervisor:	
Title: Remediation Coordinator	Approval Date:	Expiration Date:
E-mail Address: cjreynolds@paalp.com	Conditions of Approval:	Attached ☐
Date: 3/21/2005 Phone: (505)441-0965		

* Attach Additional Sheets If Necessary

Hansen, Edward J., EMNRD

From: Jason Henry [JHenry@paalp.com]
Sent: Thursday, October 01, 2009 3:41 PM
To: Hansen, Edward J., EMNRD
Subject: Photos of Plains Monument 11 site (1R-120)
Attachments: Monument 11 photos.pdf

Ed,

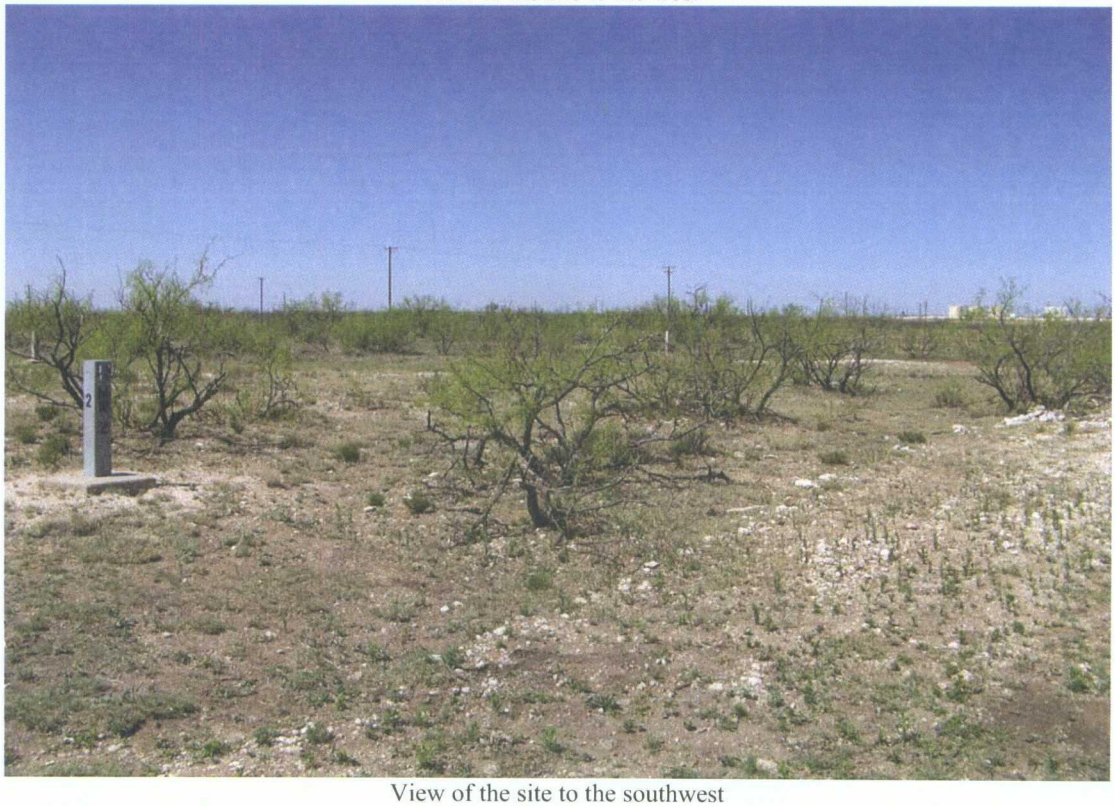
Attached are some photographs of the Monument 11 site that I took back in April of this year.

Thanks,
Jason Henry

View of the site to the east

View of the site to the northwest

View of the site to the west



View of the site to the southwest

View of the site to the southeast

View of the site to the east