AP - 12

REPORTS

DATE:

5B-2006

AP 12
Report
05B-2006

2006
ANNUAL MONITORING REPORT

TNM 98-05B

NE ¼ NW ¼ of SECTION 26, TOWNSHIP 21 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO
PLAINS EMS: TNM-98-05B-KNOWN
NMOCD Reference AP-012

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

March 2007

Curt D. Stanley
Project Manager

Todd K. Choban, P.G.
Vice President Technical Service

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INTRODUCTION

NOVA Safety and Environmental (NOVA), on behalf of Plains Pipeline, L.P. (Plains), has prepared this 2006 Annual Monitoring Report in compliance with the New Mexico Oil Conservation Division (NMOCD) letter of May 1998, requiring submittal of an Annual Monitoring Report by April 1 of each year. Beginning on May 29, 2004, project management responsibilities were assumed by NOVA, having previously been managed by Environmental Technology Group, Inc. (ETGI). This report is intended to be viewed as a complete document with figures, attachments, tables, and text. The report presents the results of four quarterly groundwater monitoring/sampling events conducted at the TNM 98-05B (also known as TNM 98-05) crude oil release site (the site), located in Lea County, New Mexico. The site, formerly the responsibility of Enron Oil Trading and Transportation (EOTT) who became Link Energy, is now the responsibility of Plains. For reference, the Site Location Map is provided as Figure 1.

Groundwater monitoring was conducted during each quarter of 2006 to assess the levels and extent of dissolved phase hydrocarbons. The groundwater monitoring events consisted of measuring static water levels in the monitor wells, and purging and sampling of each well exhibiting sufficient recharge. Phase Separated Hydrocarbons (PSH) were not detected in any of the on site monitor wells, during the reporting period.

SITE DESCRIPTION AND BACKGROUND INFORMATION

The site is located approximately two (2) miles northeast of the city of Eunice, New Mexico in the NE ¼ , NW ¼, Section 26, Township 21 South, Range 37 East (Figure 1). The release occurred on February 4, 1998 while the pipeline was operated by Texas New Mexico Pipeline Company (TNM). An estimated 49 barrels of crude oil was released from the pipeline, of which approximately three barrels were recovered during the emergency response activities. The release was attributed to external corrosion of the pipeline.

In summary, investigative and remedial activities have included a shallow soil investigation utilizing a Geo-Probe® soil boring machine, a deeper soil investigation utilizing a drilling rig, excavation of crude oil affected soils, and a groundwater investigation whereby ten (10) monitor wells were installed at the site.

In February 2005, NOVA on behalf of Plains, submitted a Site Restoration Work Plan and Proposed Soil Closure Strategy Report to the NMOCD. This report proposed field activities necessary to complete soil remediation and restore surface conditions at the TNM 98-05B site. On April 6, 2005, Plains received NMOCD approval to initiate the above referenced work plan. On May 19 and 20, 2005, Plains contractors excavated previously identified impacted soil from the sidewalls and floor of the excavation. On June 1, 2005, additional impacted soil was removed from the floor of the excavation. The total volume of excavated soil from the May and June 2005 excavations was approximately 350 cubic yards (cy). Analytical results from confirmation soil samples collected from the sidewalls and floor of the excavation indicated Total Petroleum Hydrocarbon (TPH) and Benzene, Toluene, Ethylbenzene and Xylene (BTEX) constituent concentrations were below the NMOCD regulatory standards. On June 20-22, 2005, the excavation was backfilled with stockpiled on-site soil and the surface was contoured to fit the

surrounding topography. On September 7, 2005, additional confirmation soil samples collected from the surface of the former excavation indicated BTEX constituent concentrations and TPH were below NMOCD regulatory standards.

On July 5, 2005, monitor wells MW-6 through MW-10 were plugged and abandoned with NMOCD approval by a licensed State of New Mexico water well driller. The monitor wells were plugged as directed by the NMOCD. There are currently five (5) monitor wells (MW-1 through MW-5) on site

In September, 2005, a Soil Closure Request was submitted to the NMOCD and soil closure was approved by the NMOCD in correspondence to Plains, dated November 3, 2005.

FIELD ACTIVITIES

During the reporting period, no PSH was encountered in any of the site monitor wells.

Quarterly monitoring events for the reporting period were performed according to the following sampling schedule, which was approved by the NMOCD in correspondence dated April 28, 2004 and amended by NMOCD correspondence dated June 21, 2005:

Sample Location	Sampling Schedule
MW-1	Quarterly
MW-2	Quarterly
MW-3	Quarterly
MW-4	Quarterly
MW-5	Quarterly
MW-6	Plugged and Abandoned (July 5, 2005)
MW-7	Plugged and Abandoned (July 5, 2005)
MW-8	Plugged and Abandoned (July 5, 2005)
MW-9	Plugged and Abandoned (July 5, 2005)
MW-10	Plugged and Abandoned (July 5, 2005)

Quarterly sampling events for the calendar year 2005 were performed on March 6, June 5, September 12 and November 21, 2006. Each quarterly sampling event consisted of gauging all wells and purging and sampling monitor wells as per the approved sampling schedule. During each sampling event, the monitor wells were purged of approximately three 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 samplers. Water samples were collected in clean glass containers provided by the laboratory and placed on ice in the field. Purge water was collected in a polystyrene tank and disposed of by Key Energy of Hobbs, New Mexico, utilizing a licensed disposal facility (NMOCD AO SWD-730).

The inferred groundwater gradient, constructed from measurements collected from the monitor wells during each quarterly sampling event, is depicted on Figures 2A through 2D. Groundwater elevation contours, generated from gauging data acquired during each quarterly sampling event of 2006, indicates a general groundwater gradient of 0.002 feet/foot to the southeast as measured

between monitor wells MW-2 and MW-4. Groundwater elevation data for the calendar year 2006 is provided in Table 1. Historic groundwater elevation data beginning at project inception is provided on the enclosed data disk.

LABORATORY RESULTS

Groundwater samples collected during the 2006 sampling events were delivered to Trace Analysis, Inc. of Lubbock, Texas for determination BTEX constituent concentrations by EPA Method SW846-8021b.

Analytical results of BTEX constituent analysis is summarized in Table 2. Copies of the laboratory reports generated during this reporting period are provided on the enclosed data disk. Quarterly groundwater sample results reflecting benzene and BTEX constituent concentrations and inferred PSH extent maps are depicted on Figures 3A through 3D.

Review of laboratory analytical results generated from analysis of the groundwater samples collected during the 2006 monitoring period indicate BTEX constituent concentrations are below NMOCD regulatory standards (New Mexico Administrative Code 20.6.2.3103) in all monitor wells with the exception of monitor well MW-1. The benzene concentration in monitor well MW-1 was above the NMOCD regulatory standard during the 1st and 2nd quarterly sampling events of 2006, but results indicate the benzene concentration was below NMOCD regulatory standards during the 3rd and 4th quarter of 2006. Toluene, ethylbenzene and xylene concentrations were below NMOCD regulatory standards during the reporting period.

SUMMARY

This report presents the results of annual monitoring and sampling for 2006. Monitor wells MW-6 through MW-10 were plugged and abandoned on June 5, 2005 per NMOCD approval. Currently, there are five (5) monitor wells (MW-1 through MW-5) on site. No detectable or measurable amounts of PSH were encountered during the monitoring events conducted during this reporting period.

Groundwater elevation contours, generated from water level measurements acquired during the quarterly sampling events of 2006, indicated a general gradient of 0.002 feet/foot to the southeast.

Review of laboratory analytical results generated from analysis of the groundwater samples collected during the 2006 monitoring period indicate BTEX constituent concentrations are below NMOCD regulatory standards (New Mexico Administrative Code 20.6.2.3103) in all monitor wells with the exception of monitor well MW-1. The benzene concentration in monitor well MW-1 was above the NMOCD regulatory standard during the 1st and 2nd quarterly sampling events of 2006, but results indicate the benzene concentration was below NMOCD regulatory standards during the 3rd and 4th quarter of 2006. Toluene, ethylbenzene and xylene concentrations were below NMOCD regulatory standards during the reporting period.

ANTICIPATED ACTIONS

Monitor well gauging and groundwater sampling will continue in 2007. Plains will submit a 2007 annual monitoring report by April 1, 2008.

Plains will submit a Site Closure Request to the NMOCD when groundwater analytical results demonstrate groundwater contaminant concentrations are below the regulatory standards for the required eight (8) consecutive quarterly sampling events.

LIMITATIONS

NOVA has prepared this Annual Monitoring Report 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 consent of NOVA and/or Plains.

DISTRIBUTION

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

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Larry Johnson and Patricia Caperton
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, District 1
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Houston, TX 77002
jpdann@paalp.com

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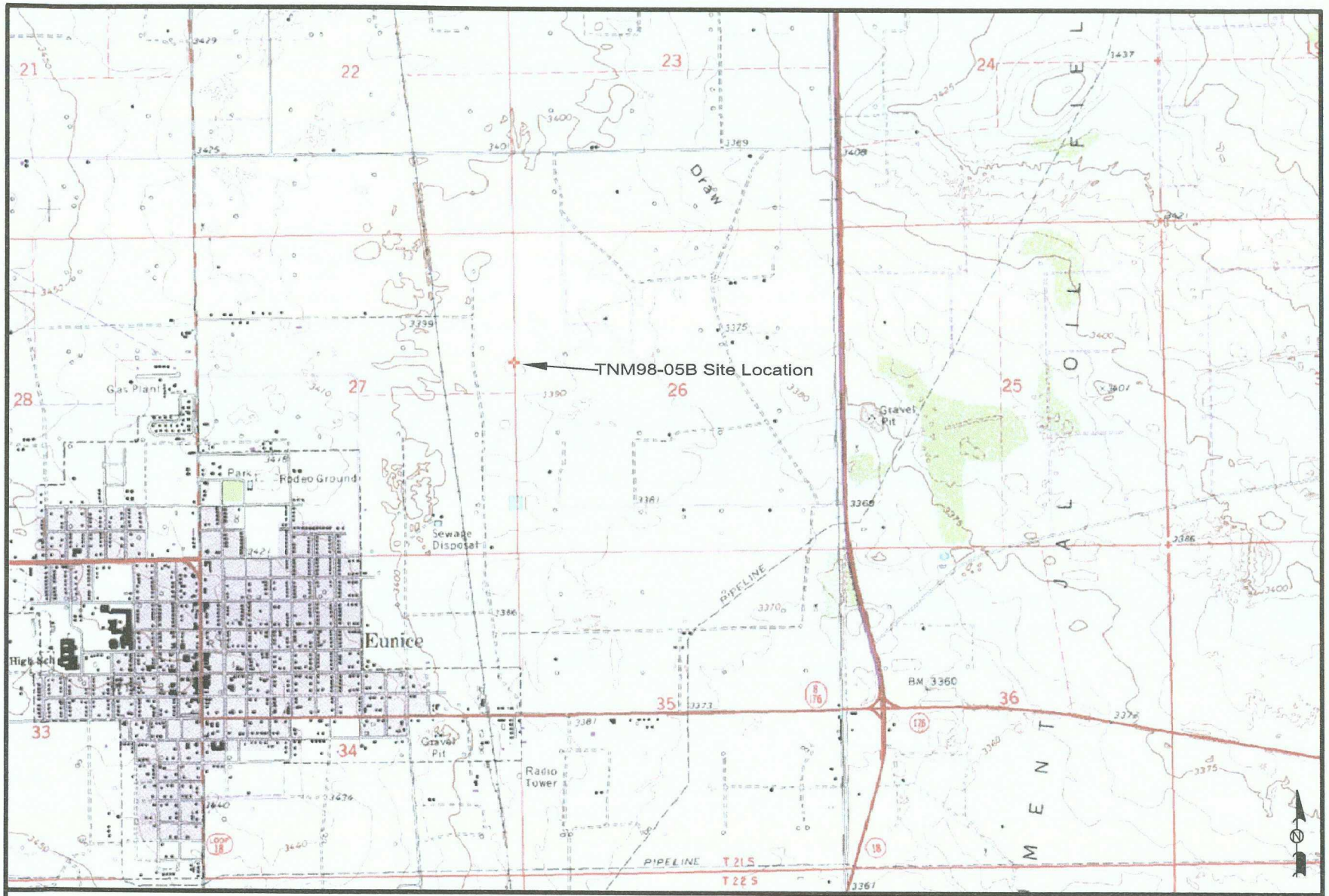
2057 Commerce Street
Midland, TX 79703
cstanley@novatraining.cc

FIGURES



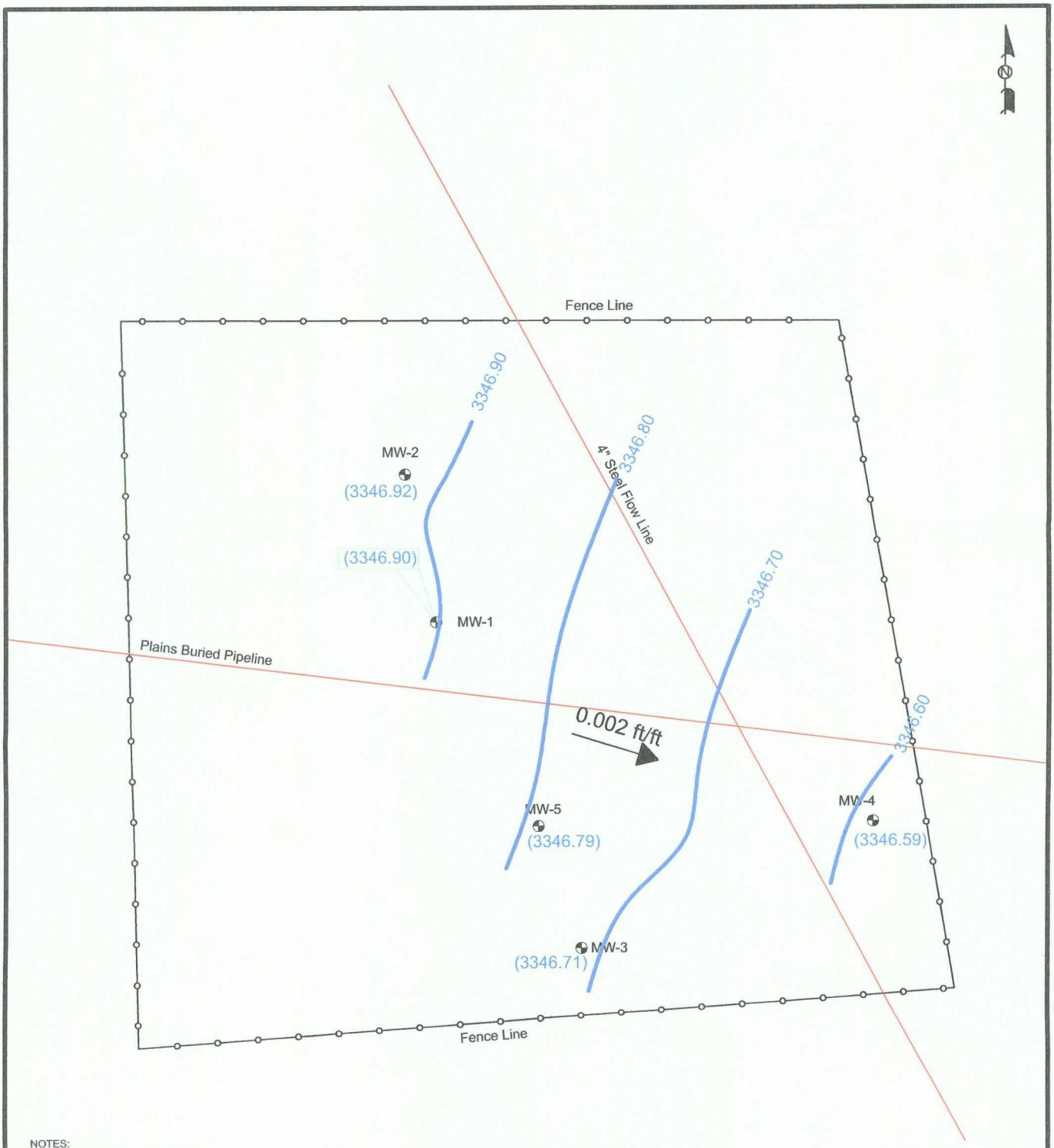
NE 1/4, NW 1/4, Sec. 26, T21S, R37E
32° 27' 03.8 N, 103°, 08', 30.3" W

Figure 1
Site Location Map
Plains Marketing, L.P.
TNM98-05B
Lea County, NM

NOVA Safety and Environmental

NOVA safety and environmental

Scale: NTS	Prep By: CDS	Checked By: TKC
December 21, 2004		



NOTES:
- Contour Interval = 0.10'
- Groundwater Gradient Measured Between MW-2 and MW-4

40 20 0 20 40
Distance in Feet

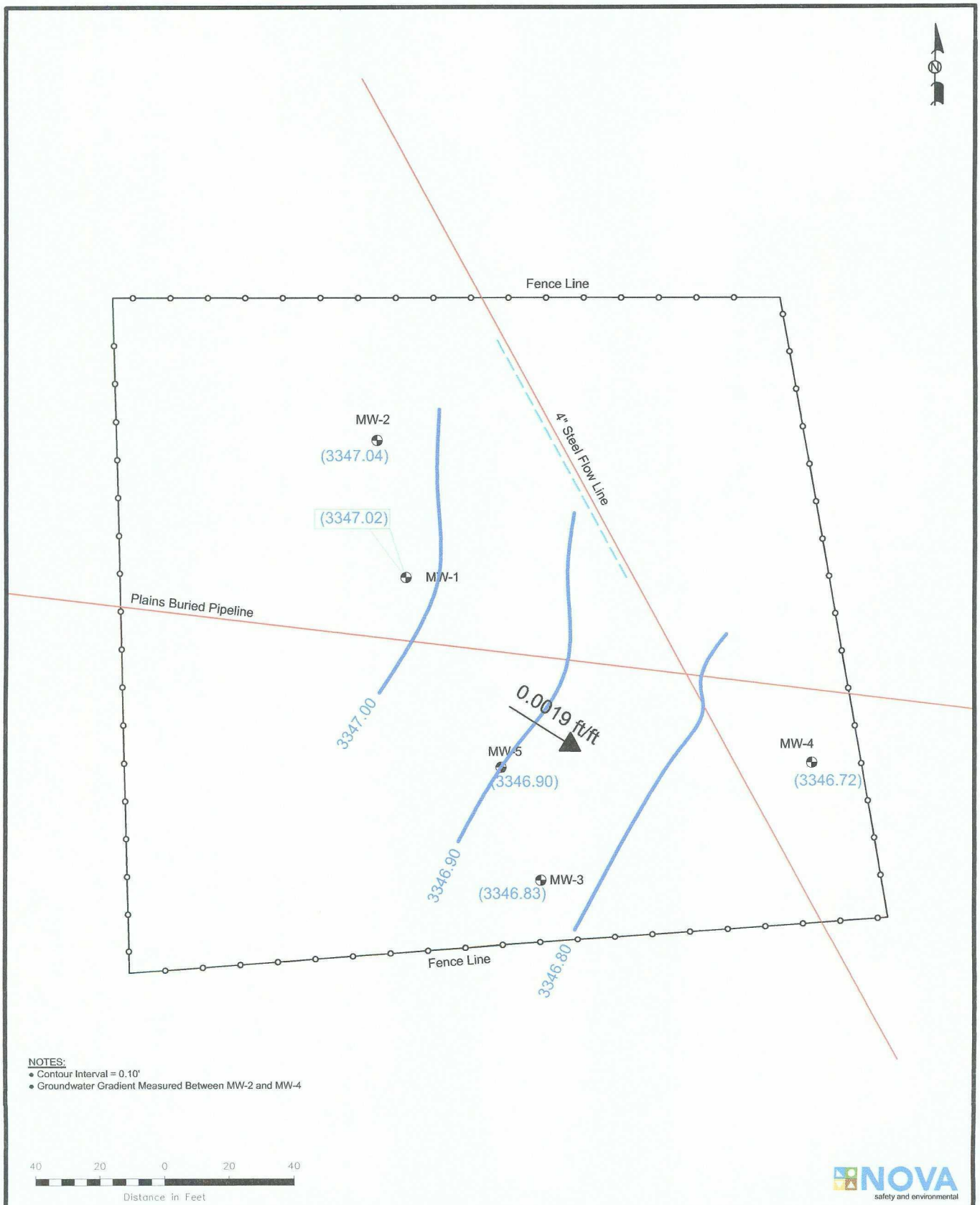
NOVA safety and environmental

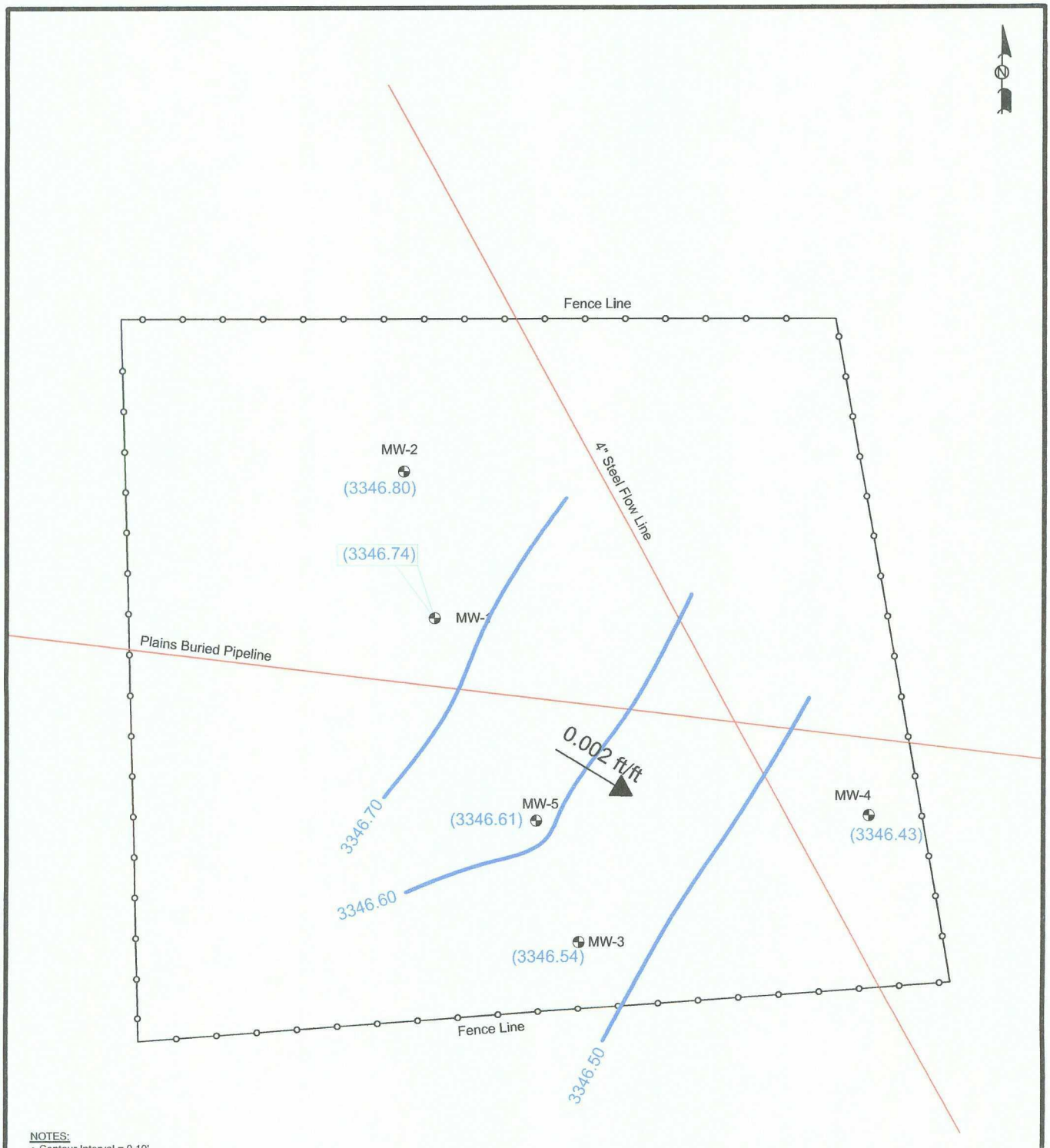
Legend:
- Monitor Well Location
- (3346.61) Groundwater Elevation (feet)
- 0.001 ft/ft Groundwater Gradient and Magnitude
- Fence
- Pipeline
- Groundwater Contour Line

Figure 2A
Inferred Groundwater Gradient Map (3/6/06)
Plains Marketing, L.P.
TNM98-05B
Lea County, NM

NOVA Safety and Environmental

Scale: 1" = 40'	CAD By: DGC	Checked By: CDS
May 24, 2006		


N
Fence Line
MW-2
(3347.04)
(3347.02)
MW-1
4" Steel Flow Line
Plains Buried Pipeline
3347.00
0.0019 ft/ft
MW-5
(3346.90)
MW-4
(3346.72)
3346.90
MW-3
(3346.83)
Fence Line
3346.80
NOTES:
• Contour Interval = 0.10'
• Groundwater Gradient Measured Between MW-2 and MW-4
40 20 0 20 40
Distance in Feet
NOVA
safety and environmental
Legend:
Monitor Well Location
(3346.61) Groundwater Elevation (feet)
0.001 ft/ft Groundwater Gradient and Magnitude
Fence
Pipeline
Groundwater Contour Line
Figure 2B
Inferred Groundwater Gradient Map (6/5/06)
Plains Marketing, L.P.
TNM98-05B
Lea County, NM
NOVA Safety and Environmental
Scale: 1" = 40'
CAD By: DGC
Checked By: CDS
June 23, 2006



NOTES:
- Contour Interval = 0.10'
- Groundwater Gradient Measured Between MW-2 and MW-4

40 20 0 20 40
Distance in Feet

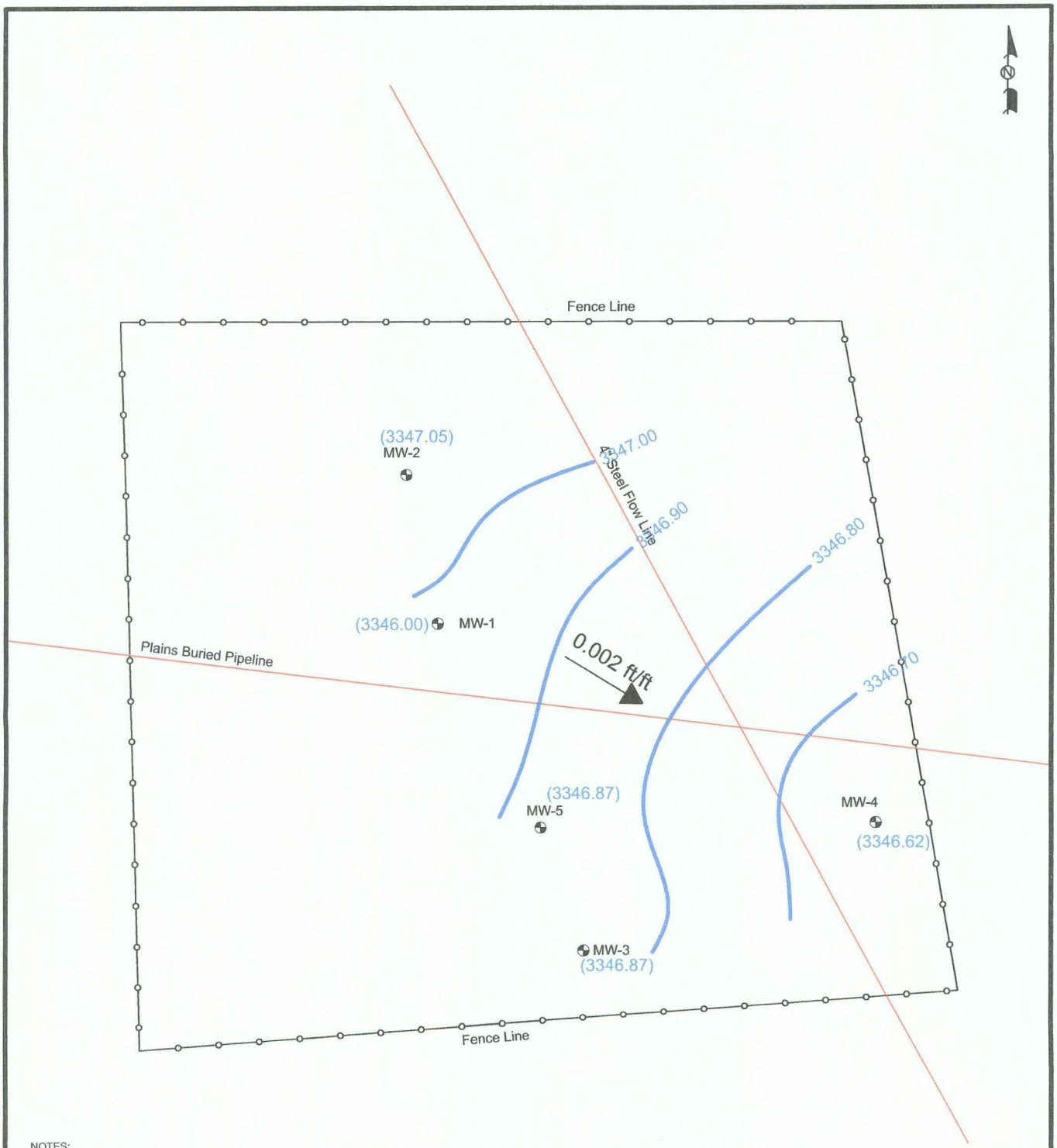
NOVA safety and environmental

Legend:
- Monitor Well Location
- (3346.61) Groundwater Elevation (feet)
- 0.001 ft/ft Groundwater Gradient and Magnitude
- Fence
- Pipeline
- Groundwater Contour Line

Figure 2C
Inferred Groundwater Gradient Map (9/11/06)
Plains Marketing, L.P.
TNM98-05B
Lea County, NM

NOVA Safety and Environmental

Scale: 1" = 40'	CAD By: DGC	Checked By: CDS
October 10, 2006		



NOTES:
- Contour Interval = 0.10'
- Groundwater Gradient Measured Between MW-2 and MW-4
- Monitor Well MW-1 was Not Used For The Construction of This Map

40 20 0 20 40
Distance in Feet

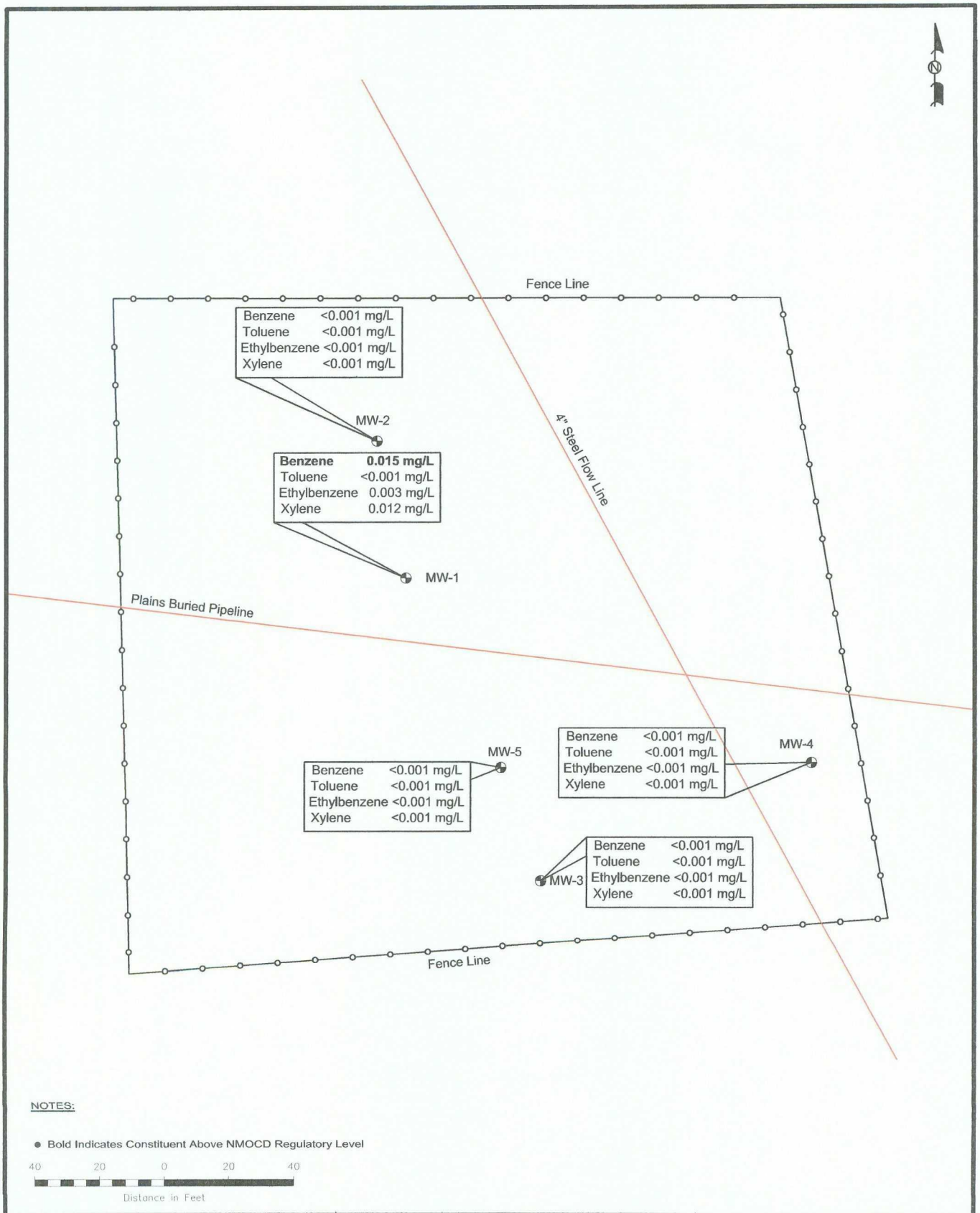
NOVA safety and environmental

Legend:
- Monitor Well Location
- (3346.61) Groundwater Elevation (feet)
- 0.001 ft/ft Groundwater Gradient and Magnitude
- Fence
- Pipeline
- Groundwater Contour Line

Figure 2D
Inferred Groundwater Gradient Map (11/21/06)
Plains Marketing, L.P.
TNM98-05B
Lea County, NM

NOVA Safety and Environmental

Scale: 1" = 40'	CAD By: DGC	Checked By: CDS
January 2, 2006		



NOTES:

- Bold Indicates Constituent Above NMOCD Regulatory Level

40 20 0 20 40

Distance in Feet

Legend:

Monitor Well Location <0.001 Constituent Concentration (mg/L)

Fence

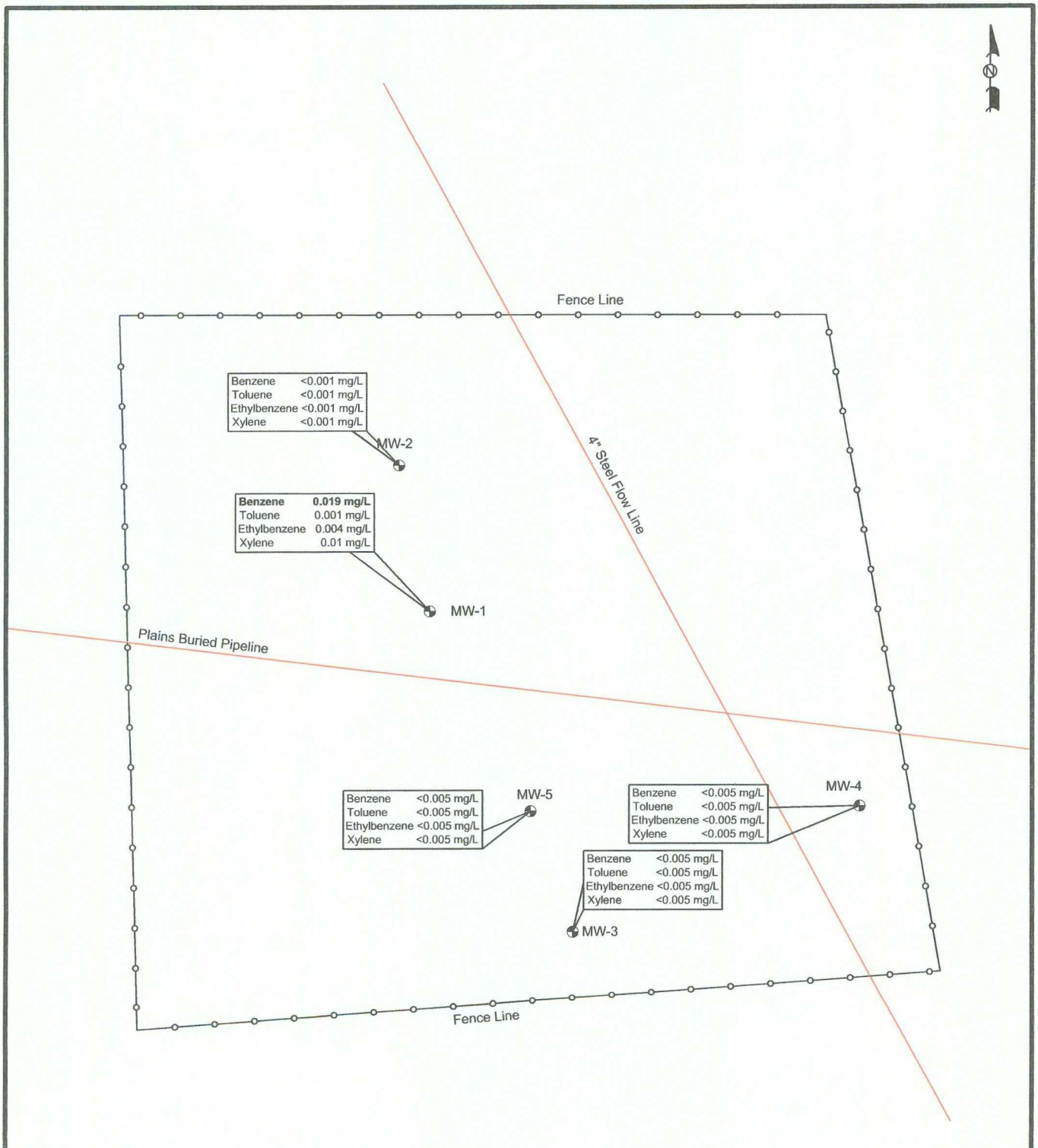
Pipeline

Figure 3A
Groundwater Concentration and Inferred PSH Extent Map (3/06/06)
Plains Marketing, L.P.
TNM98-05B
Lea County, NM

NOVA Safety and Environmental

NOVA safety and environmental

Scale: 1" = 40'	CAD By: DGC	Checked by: CDS
May 22, 2006		



NOTES:

- Bold Indicates Constituent Above NMOCD Regulatory Level

40 20 0 20 40

Distance in Feet

Legend:

Monitor Well Location <0.001 Constituent Concentration (mg/L)

Fence

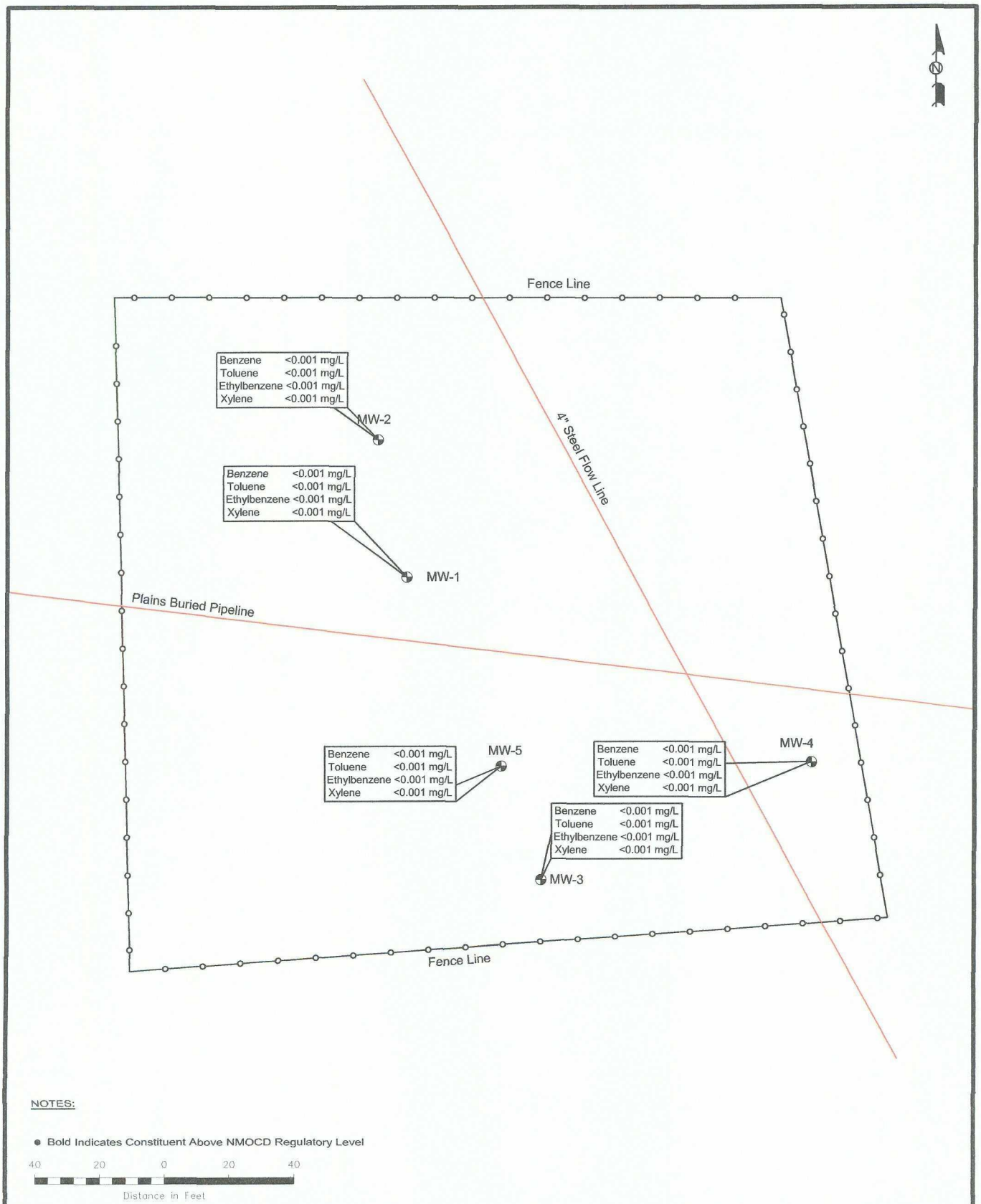
Pipeline

Figure 3B
Groundwater Concentration and Inferred PSH Extent Map (06/05/06)
Plains Marketing, L.P.
TNM98-05B
Lea County, NM

NOVA Safety and Environmental

NOVA safety and environmental

Scale: 1" = 40'	CAD By: DGC	Checked by: CDS
July 24, 2006		



NOTES:

- Bold Indicates Constituent Above NMOCD Regulatory Level

40 20 0 20 40

Distance in Feet

Legend:

Monitor Well Location <0.001 Constituent Concentration (mg/L)

Fence

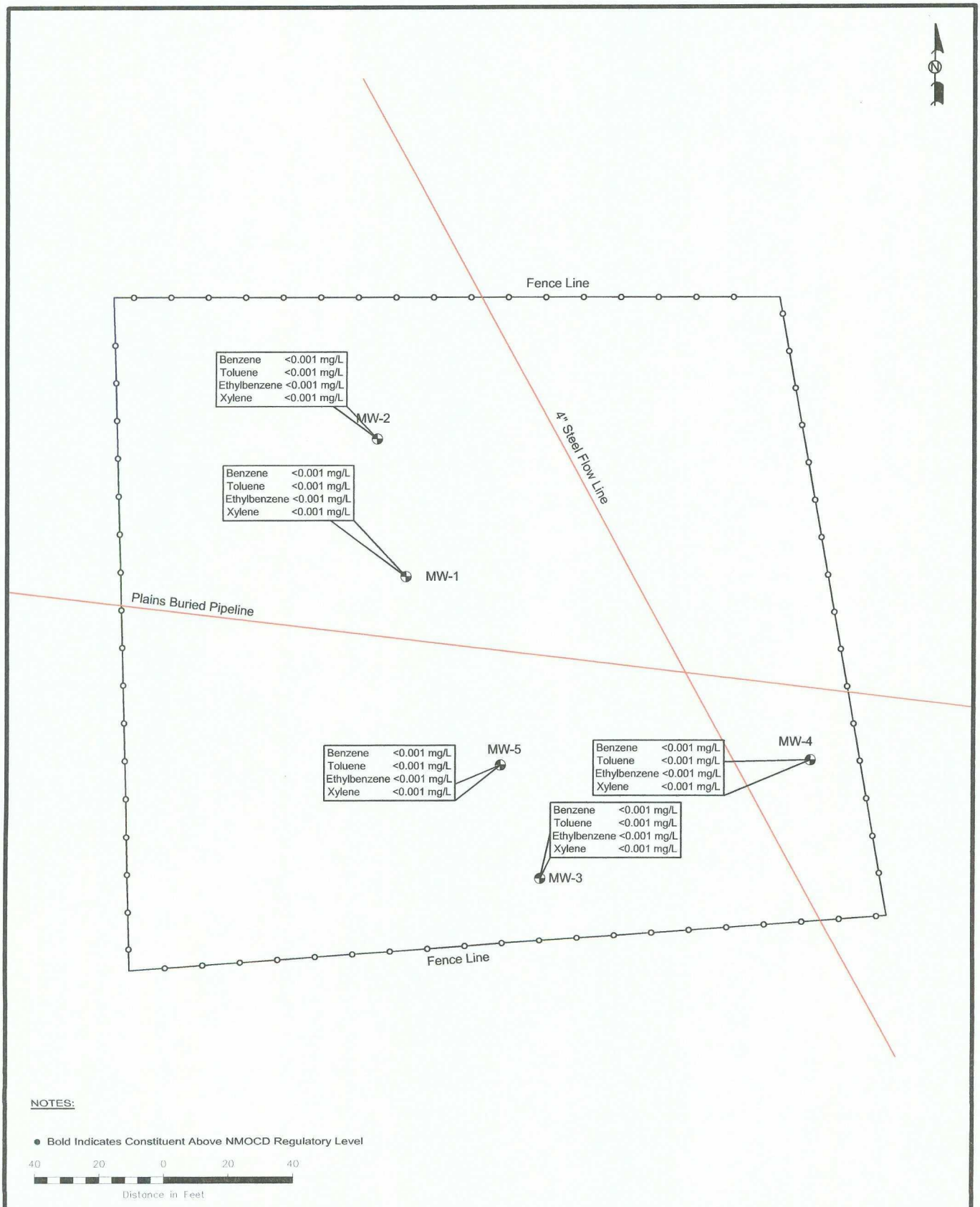
Pipeline

Figure 3C
Groundwater Concentration and Inferred PSH Extent Map (09/12/06)
Plains Marketing, L.P.
TNM98-05B
Lea County, NM

NOVA Safety and Environmental

NOVA safety and environmental

Scale: 1" = 40'	CAD By: DGC	Checked by: CDS
January 31, 2007		



NOTES:

- Bold Indicates Constituent Above NMOCD Regulatory Level

40 20 0 20 40

Distance in Feet

Legend:

Monitor Well Location <0.001 Constituent Concentration (mg/L)

Fence

Pipeline

Figure 3D
Groundwater Concentration and Inferred PSH Extent Map (11/21/06)
Plains Marketing, L.P.
TNM98-05B
Lea County, NM

NOVA Safety and Environmental

NOVA safety and environmental

Scale: 1" = 40'	CAD By: DGC	Checked by: CDS
January 31, 2007		

TABLES

TABLE 1

2006 GROUNDWATER ELEVATION DATA

Plains Marketing, LP
TNM 98-05B
LEA COUNTY, NEW MEXICO

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUND WATER ELEVATION
MW-1	*03/06/06*	3393.95	-	47.05	0.00	3346.90
	04/13/06	3393.95	-	47.03	0.00	3346.92
	06/05/06	3393.95	-	46.93	0.00	3347.02
	09/11/06	3393.95	-	47.21	0.00	3346.74
	10/31/06	3393.95	sheen	47.08	0.00	3346.87
	11/14/06	3393.95	sheen	47.07	0.00	3346.88
	11/21/06	3393.95	-	47.95	0.00	3346.00
MW-2	*03/06/06*	3394.75	-	47.83	0.00	3346.92
	06/05/06	3394.75	-	47.71	0.00	3347.04
	09/11/06	3394.75	-	47.95	0.00	3346.80
	11/21/06	3394.75	-	47.70	0.00	3347.05
MW-3	*03/06/06*	3393.58	-	46.87	0.00	3346.71
	06/05/06	3393.58	-	46.75	0.00	3346.83
	09/11/06	3393.58	-	47.04	0.00	3346.54
	11/21/06	3393.58	-	46.81	0.00	3346.77
MW-4	*03/06/06*	3394.98	-	48.39	0.00	3346.59
	06/05/06	3394.98	-	48.26	0.00	3346.72
	09/11/06	3394.98	-	48.55	0.00	3346.43
	11/21/06	3394.98	-	48.36	0.00	3346.62
MW-5	*03/06/06*	3393.47	-	46.68	0.00	3346.79
	06/05/06	3393.47	-	46.57	0.00	3346.90
	09/11/06	3393.47	-	46.86	0.00	3346.61
	11/21/06	3393.47	-	46.61	0.00	3346.86

Elevations based on the North American Vertical Datum of 1929.

TABLE 2

2006 CONCENTRATIONS OF BTEX IN GROUNDWATER

PLAINS MARKETING, L.P.
TNM 98-05B
LEA COUNTY, NEW MEXICO

All concentrations are reported in mg/L

SAMPLE LOCATION	SAMPLE DATE	SW 846-8021B, 5030				
		BENZENE	TOLUENE	ETHYL-BENZENE	m, p - XYLENES	o - XYLENE
NMOCD Regulatory Limit		**0.01**	**0.75**	**0.75**	**Total Xylenes 0.62**	
MW-1	03/06/06	**0.015**	<0.001	0.003	0.012	
	06/05/06	**0.019**	0.001	0.004	0.010	
	09/12/06	<0.001	<0.001	<0.001	<0.001	
	11/21/06	<0.001	<0.001	<0.001	<0.001	
MW-2	03/06/06	<0.001	<0.001	<0.001	<0.001	
	06/05/06	<0.001	<0.001	<0.001	<0.001	
	09/12/06	<0.001	<0.001	<0.001	<0.001	
	11/21/06	<0.001	<0.001	0.001	<0.001	
MW-3	03/06/06	<0.001	<0.001	<0.001	<0.001	
	06/05/06	<0.005	<0.005	<0.005	<0.005	
	09/12/06	<0.001	<0.001	<0.001	<0.001	
	11/21/06	<0.001	<0.001	<0.001	<0.001	
MW-4	03/06/06	<0.001	<0.001	<0.001	<0.001	
	06/05/06	<0.005	<0.005	<0.005	<0.005	
	09/12/06	<0.001	<0.001	<0.001	<0.001	
	11/21/06	<0.001	<0.001	<0.001	<0.001	
MW-5	03/06/06	<0.001	<0.001	<0.001	<0.001	
	06/05/06	<0.005	<0.005	<0.005	<0.005	
	09/12/06	<0.001	<0.001	<0.001	<0.001	
	11/21/06	<0.001	<0.001	<0.001	<0.001	

Note: m, p and o Xylenes combined when analyzed by Trace Laboratories, Inc. only.

APPENDICES

APPENDIX A:
Release Notification 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, 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 TNM 98-05B	Facility Type 6" Steel Pipeline

Surface Owner Delrose Scott	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	26	21S	37E					Lea

Latitude 32° 27' 03.8" **Longitude** 103°08' 30.3"

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release 49 barrels	Volume Recovered 3 barrels
Source of Release 6" Steel Pipeline	Date and Hour of Occurrence 02-05-1998	Date and Hour of Discovery 02-05-1998
Was Immediate Notice Given? x Yes ☐ No ☐ Not Required	If YES, To Whom? Linda Williams	
By Whom? Johnny Chapman	Date and Hour 02-05-1998 @15:00	
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.* External corrosion of 6 inch pipeline.

Describe Area Affected and Cleanup Action Taken.* Aerial extent of surface impact was approximately 100 x 30 feet.
NOTE: This information was obtained from historical EOTT/Link files, Plains acquired EOTT/Link on April 1, 2004 and Plains assumes this information to be correct. The release occurred during the time the pipeline was owned and operated by Texas-New Mexico Pipeline Company.

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: 02/03/2005 Phone:505-441-0965		

Attach Additional Sheets If Necessary