1R - 380

REPORTS

DATE:

2005

PLAINS
ALL AMERICAN

March 30, 2005

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

Re: Plains All American – Annual Monitoring Reports
4 Sites in Lea County, New Mexico

Dear Mr. Martin:

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 our Annual Monitoring reports for the following sites:

8" Moore to Jal #1	Section 16, Township 17 South, Range 37 East, Lea County
8" Moore to Jal #2	Section 16, Township 17 South, Range 37 East, Lea County
Lovington Deep 6"	Section 6, Township 17 South, Range 36 East, Lea County
Livingston Line B. McCasland	Section 3, Township 21 South, Range 37 East, Lea County

EPI prepared these documents and has vouched for their accuracy and completeness, and on behalf of Plains All American, I have personally reviewed the documents and interviewed EPI in order to verify the accuracy and completeness of these documents. It is based upon these inquiries and reviews that Plains All American submits the enclosed Annual Monitoring Reports for the above 4 facilities.

If you have any questions or require further information, please contact me at (505) 441-0965.

Sincerely,

Camille Reynolds

Camille Reynolds
Remediation Coordinator
Plains All American

CC: Larry Johnson, NMOCD, Hobbs, NM

Enclosures

ENVIRONMENTAL PLUS, INC. Micro-Blaze Micro-Blaze Out™
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES

30 March 2005

Mr. Ed Martin
NM Energy, Minerals, and Natural Resources Department
New Mexico Oil Conservation Division – Environmental Bureau
1220 South St. Francis Drive
Santa Fe, NM 87505

1R-380

Re: Annual Monitoring Report
Plains All American Pipeline, L.P., 8" Moore to Jal #1 (Ref. #2002-10270)
UL-F, Section 16, T17S, R37E, Lea County, New Mexico

Dear Mr. Martin:

Environmental Plus, Inc. (EPI), on behalf of Ms. Camille Reynolds, Plains All American Pipeline, L.P. (Plains), submits for your consideration this *Annual Monitoring Report* for the above-referenced site. Based on data collected during the past year, Plains recommends continued site monitoring for, and recovery of, phase-separated hydrocarbons (PSH) on a weekly basis. In addition, Plains recommends the installation of eight additional groundwater monitoring and/or product recovery wells to further delineate free phase and/or dissolved phase groundwater impacts. A soil remediation plan will be completed and submitted during the second quarter of 2005 and an abatement plan will completed and submitted to address groundwater issues at the site upon the completion of soil remedial activities at the site.

Should you have any questions or comments please feel free to contact me at (505) 394-3481. Ms. Reynolds may be contacted through Plains' Lovington office at (505) 396-3341. All official correspondence should be addressed to:

Ms. Camille Reynolds
Plains All American Pipeline, L.P.
P.O. Box 3119
Midland, Texas 79702-3119

Sincerely,

ENVIRONMENTAL PLUS, INC.

Iain Olness

Iain Olness, P.G.
Hydrogeologist

cc: Larry W. Johnson, NMOCD – Hobbs District Office
Camille Reynolds, Plains All American Pipeline, L.P. – Lovington
Jeff Dann, Plains All American Pipeline, L.P. – Houston
File

ENVIRONMENTAL PLUS, INC.

P.O. BOX 1558 ••• 2100 AVENUE O ••• EUNICE, NEW MEXICO 88231
TELEPHONE 505•394•3481 ••• FAX 505•394•2601

PLAINS
ALL AMERICAN
PIPELINE, L.P.

ANNUAL MONITORING REPORT

8" MOORE TO JAL #1
PLAINS REF: 2002-10270

SE¼ OF THE NW¼ OF SECTION 16, TOWNSHIP 17 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

~9.1 MILES SOUTHEAST (136°) OF
LOVINGTON, LEA COUNTY, NEW MEXICO
LATITUDE: N32° 50' 13.8" LONGITUDE: W103° 15' 25.3"

MARCH 2005

PREPARED BY:

Environmental Plus, Inc.

2100 Avenue O
P.O. Box 1558
Eunice, NM 88231

Phone: (505)394-3481
FAX: (505)394-2601
jolness@hotmail.com

Distribution List

Name	Title	Company or Agency	Mailing Address	e-mail
Ed Martin	Environmental Engineer	NMOCD	1220 South St. Francis Drive Santa Fe, NM 87505	emartin@state.nm.us
Larry Johnson	Environmental Engineer	NMOCD	1625 French Dr. Hobbs, NM 88231	lwjohnson@state.nm.us
Camille Reynolds	Remediation Coordinator	Plains All American Pipeline	P. O. Box 3119 Midland, TX 79702-3119	cjreynolds@paalp.com
Jeff Dann	Senior Environmental Specialist	Plains All American Pipeline	P. O. Box 4648 Houston, TX 77210-4648	jpdann@paalp.com
File		EPI	P.O. Box 1558 Eunice, NM 88231	iolness@hotmail.com

NMOCD - New Mexico Oil Conservation Division
EPI - Environmental Plus, Inc.

STANDARD OF CARE

Annual Monitoring Report

8" Moore to Jal #1
Ref. # 2002-10270

The information provided in this report was collected consistent with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993), the NMOCD Unlined Surface Impoundment Closure Guidelines (February 1993), and the Environmental Plus, Inc. (EPI) Standard Operating Procedures and Quality Assurance/Quality Control Plan. The conclusions are based on field observations and laboratory analytical reports as presented in the report. Recommendations follow NMOCD guidance and represent the professional opinions of EPI staff. These opinions were arrived at with currently accepted geologic, hydrogeologic and engineering practices at this time and location. The report was prepared or reviewed by a certified or registered EPI professional with a background in engineering, environmental, and/or the natural sciences.

This report was prepared by:

Iain A. Olness — 29 March 2005

Iain A. Olness, P.G.
Hydrogeologist

Date

This report was reviewed by:

Pat McCasland — 29 March 2005

Pat McCasland

Date

TABLE OF CONTENTS

FIGURES

TABLES

APPENDIX

I Background and Previous Remedial Activities

The 8" Moore to Jal #1 release site is located approximately 9.1 miles southeast of Lovington in Lea County, New Mexico, at an elevation of approximately 3,770 feet above mean sea level (reference Figures 1 and 2). The release occurred on property owned by the State of New Mexico and is utilized as pasture land. The site is located in a rural area within the West Lovington oil field, with no residences or surface water within a 1,000-foot radius of the facility.

In October 2002, a release of approximately 200 barrels of crude oil, of which there was no recovery, occurred at the site due to corrosion (internal and/or external) of the pipeline. Approximately 8,000 square feet (ft^2) of surface area was impacted by the release. Surficial soil saturated by the release was excavated and transported to a New Mexico Oil Conservation Division (NMOCD) approved land farm for treatment.

In an effort to delineate the extent of impacted soil at the site, five soil borings were advanced at the site to depths ranging from 15 to 60 feet below ground surface (bgs) in October 2002. Field analyses of soil samples collected at discreet intervals indicated organic vapor concentrations exceeded 100 parts per million (ppm) at least to a depth of 55 feet bgs in soil boring BH-1.

Excavation activities commenced at the site in June 2003 in order to remove soil impacted above the New Mexico Oil Conservation Division (NMOCD) remedial thresholds. Approximately 2,800 cubic yards of soil were excavated and run through a shaker to separate the rock from the soil. After the soil and rock had been separated, the soil (approximately 950 cubic yards) was spread out into two land treatment areas and the rock was stockpiled on site (reference *Figure 3*). Upon the completion of excavation activities, composite samples were collected from the north endwall, south endwall, east sidewall, west sidewall and bottom of the excavation to document the successful removal of soil impacted above NMOCD remedial thresholds. Laboratory analyses of the samples indicated soil impacted above the NMOCD remedial thresholds remained in all sampling locals, with the exception of the west sidewall (reference *Table 4*).

II Current Field Activities

Based on field analyses of samples collected from soil borings advanced during initial delineation activities, the NMOCD requested that a groundwater monitoring well be installed to determine if groundwater had been impacted by the release. In July 2004, a groundwater monitoring well (MW-1) was installed at the site near the point of release. Due to the screened interval of groundwater monitoring well MW-1 being set to low (i.e., water level above the top of the screen), a second groundwater monitoring well (MW-1A) was installed at the site in September 2004.

Three additional groundwater monitoring wells (MW-2, MW-3 and MW-4) were installed around the excavation basin in October 2004. PSH were detected in each of these new wells.

Site visits were made to the site on October 8, October 14, October 20, October 29, November 4, November 10, November 17, November 24, December 2, December 8, December 15, December 27 and December 29, 2004 to record water and PSH levels in the wells and recover PSH from

the groundwater monitoring well network. A total of approximately 517 gallons of PSH were recovered during these site visits.

The land treatment area was sampled on December 15, 2004, in conjunction with the weekly site visit. Sampling results indicate contaminant levels above the NMOCD remedial thresholds for this site (reference *Table 3*).

III Groundwater Monitoring Well Installation

One groundwater monitoring well, MW-1 was installed at the site in July 2004. This well was installed at the request of the NMOCD in order to determine if groundwater had been impacted by the release. This groundwater monitoring well was installed adjacent to the pipeline near the point of release (reference *Figure 3*) to a depth of 80 feet below ground surface (bgs) and screened from 60 to 80 feet bgs (reference *Appendix B*).

Due to the screened interval of groundwater monitoring well MW-1 being set to low (i.e., water level above the top of the screen), a second groundwater monitoring well (MW-1A) was installed at the site in September 2004. This groundwater monitoring well was installed adjacent to the pipeline near the point of release (reference *Figure 3*) to a depth of 75 feet bgs and screened from 55 to 75 feet bgs (reference *Appendix B*).

Due to the presence of PSH on the watertable, three additional groundwater monitoring wells (MW-2, MW-3 and MW-4) were installed at the site in October 2004. These wells were installed to delineate the lateral extent of PSH and/or dissolved phase impacts to the groundwater. Groundwater monitoring well MW-2 was installed approximately 95 feet north of groundwater monitoring well MW-1 (reference *Figure 3*) to a depth of 83 feet bgs and screened from 63 to 83 feet bgs (reference *Appendix B*). Groundwater monitoring well MW-3 was installed approximately 116 feet east-southeast of groundwater monitoring well MW-1 (reference *Figure 3*) to a depth 83 feet bgs and screened from 63 to 83 feet bgs (reference *Appendix B*). Groundwater monitoring well MW-4 was installed approximately 104 feet south of groundwater monitoring well MW-1 (reference *Figure 3*) to a depth of 83 feet bgs and screened from 63 to 83 feet bgs (reference *Appendix B*).

Field and laboratory analytical results from this additional investigation are included in *Table 2*.

IV Groundwater Gradient and PSH Thickness

Monitoring wells were gauged prior to bailing to determine the depth to groundwater and the thickness of any PSH. Except for minor fluctuations, groundwater levels indicated an overall decrease in groundwater levels during the final quarter of 2004 (reference *Figure 4*). PSH levels in the groundwater monitoring well MW-1 have shown a sharp decrease during the past year. This is attributed to the fact that the screen was set to low and the watertable interface was located above the top of the screen; thus, not allowing PSH to enter the well (reference *Figure 5*). PSH levels in the groundwater monitoring well MW-1A showed a sharp increase shortly after the well was installed, decreased through the end of November, remained elevated through early December and decreased through the end of the year. The sharp increase in PSH levels seen

shortly after the well was installed was attributed to well development. PSH levels in the groundwater monitoring well MW-2 have shown an overall general increase during the final quarter of 2004. PSH levels in the groundwater monitoring wells MW-3 and MW-4 have generally remained stable during the final quarter of 2004. A summary of groundwater elevations and PSH thickness is included in *Table 1* and illustrated in *Figures 4* and *5*).

Groundwater flow maps were not constructed for this site due to the presence of PSH on the water column in all the groundwater monitoring wells; however, it is presumed to be consistent with the Plains Pipeline, L.P., *8" Moore to Jal #2* release site located approximately 0.4 miles southeasterly of this site. Groundwater at the Plains Pipeline, L.P., *8" Moore to Jal #2* release site is flowing southerly.

V PSH Recovery

Recovery of the PSH present on the groundwater surface in the vicinity of groundwater monitoring well network was accomplished via hand bailing during the past year. A total of 517 gallons of PSH were recovered during the past year (reference *Table 1*).

VI Groundwater Sampling

Due to the presence of PSH on the water column in each of the groundwater monitoring wells, no samples were collected for laboratory analyses.

VII Recommendations

Based on field monitoring and analytical results collected during the past year, the following changes are recommended in the sampling protocol:

1) Continue to monitor the system on a weekly basis to record water and PSH levels and recover PSH from the existing groundwater monitoring network.

2) Install eight additional groundwater recovery and/or monitoring wells at the site to further delineate the lateral extent of the free phase and dissolved phase groundwater impacts (reference *Figure 6*).

3) A soil remediation plan will be developed and submitted to the NMOCD in the second quarter of 2005 to address soil issues at the site.

4) An *Abatement Plan* will be developed and submitted to the NMOCD to address the groundwater issues at the site. This plan will be developed upon the completion of soil remedial activities at the site.

5) Seal groundwater monitoring well MW-1 as it was incorrectly constructed when it was installed. It shall be sealed by placing bentonite grout/pellets in the casing from the base of the well to approximately one foot bgs and the above-ground features of the well removed.

FIGURES

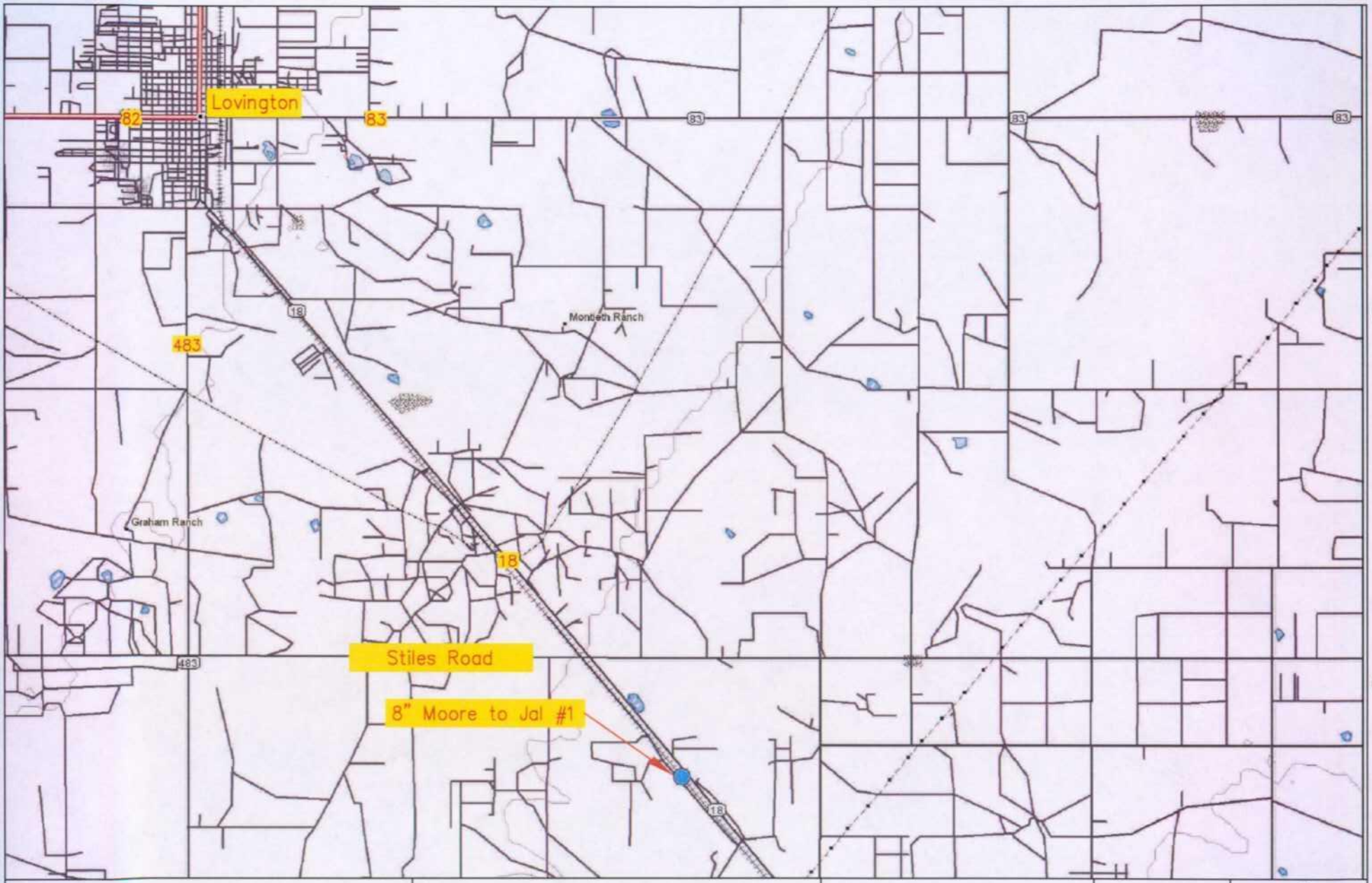


Figure 1
Area Map
Plains Pipeline, L.P.
8" Moore to Jal #1

Lea County, New Mexico
SE 1/4 of the NW 1/4, Sec. 16, T17S, R37E
N 32° 50' 13.8" W 103° 15' 25.3"
Elevation: 3,770 feet amsl

DWG By: Iain Olness
March 2005

REVISED:

0 1.5 3.0
Miles

SHEET
1 of 1

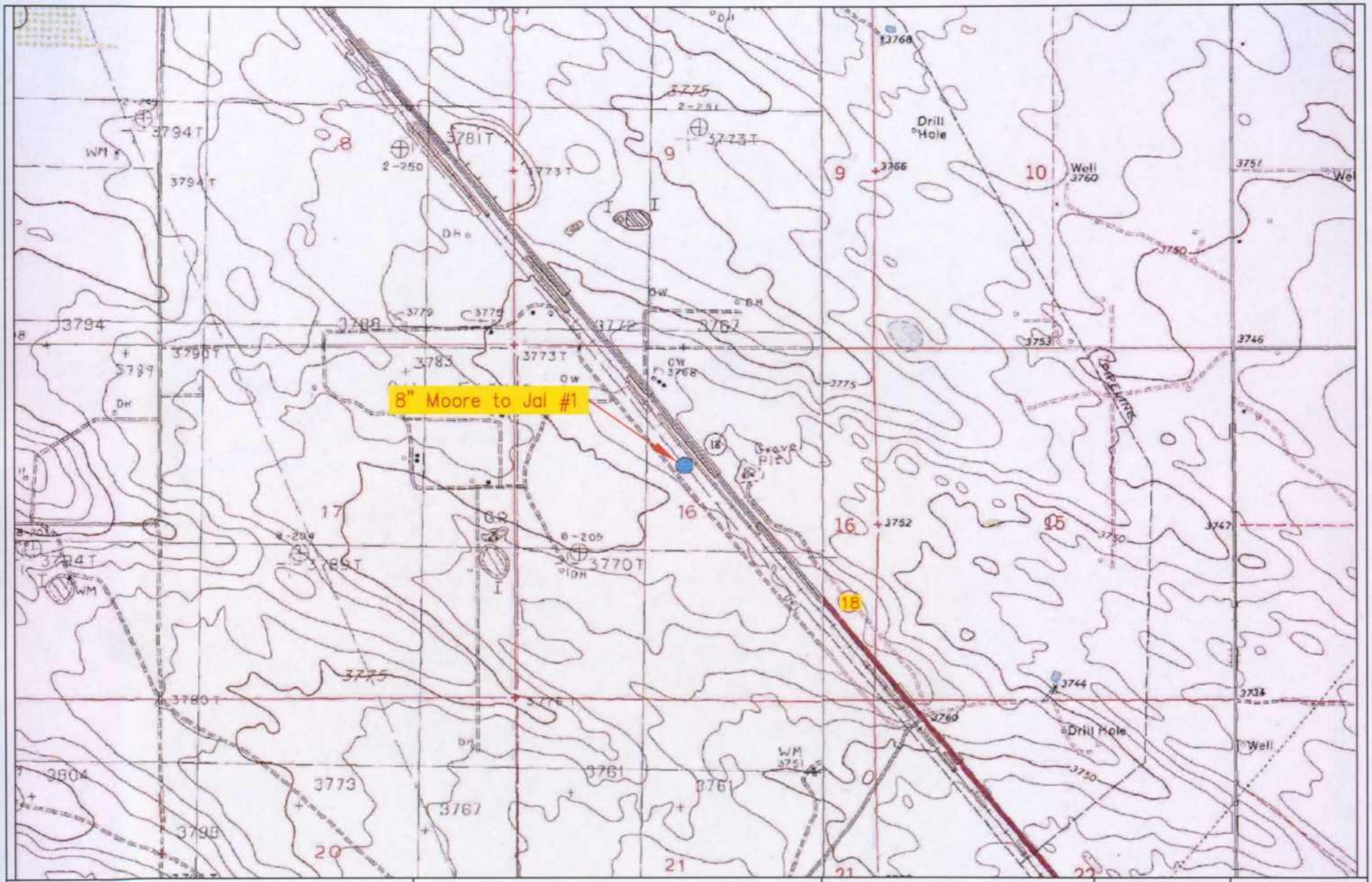


Figure 2 Site Location Map Plains Pipeline, L.P. 8" Moore to Jal #1	Lea County, New Mexico SE 1/4 of the NW 1/4, Sec. 16, T17S, R37E N 32° 50' 13.8" W 103° 15' 25.3" Elevation: 3,770 feet amsl	DWG By: Iain Olness March 2005	REVISED:
		0 1.5 3.0 Miles	SHEET 1 of 1
			N

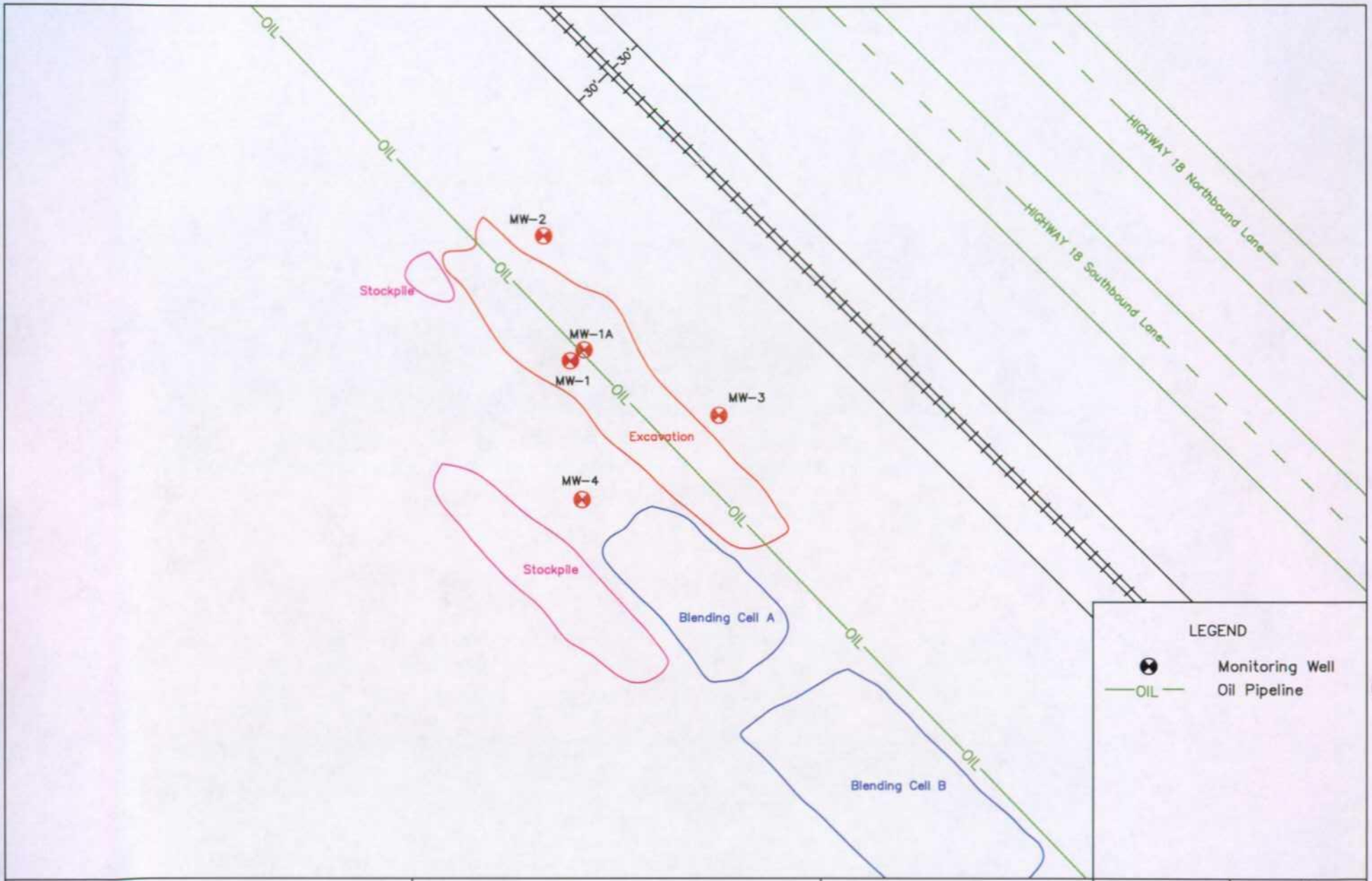


Figure 3 Site Map Plains Pipeline, L.P. 8" Moore to Jal #1	Lea County, New Mexico SE 1/4 of the NW 1/4, Sec. 16, T17S, R37E N 32° 50' 13.8" W 103° 15' 25.3" Elevation: 3,770 feet amsl	DWG By: Iain Olness March 2005 0 100 200 Feet	REVISED: SHEET 1 of 1	N

Figure 4: Hydrograph for Groundwater Monitoring Wells MW-1 through MW-4 from 10/08/04 through 12/31/04, Plains Pipeline, L.P., 8" Moore to Jal #1, Lea County, New Mexico.

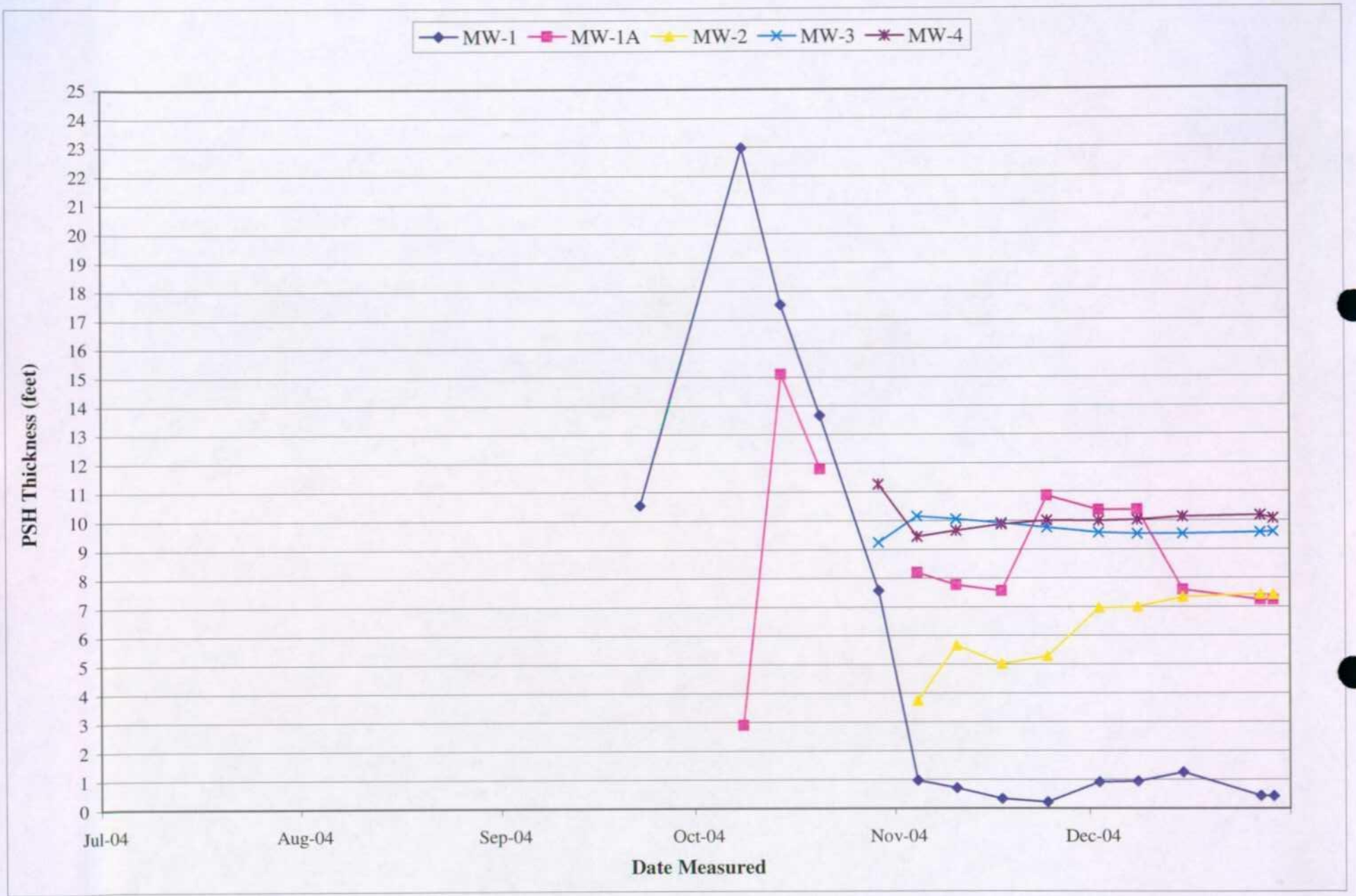
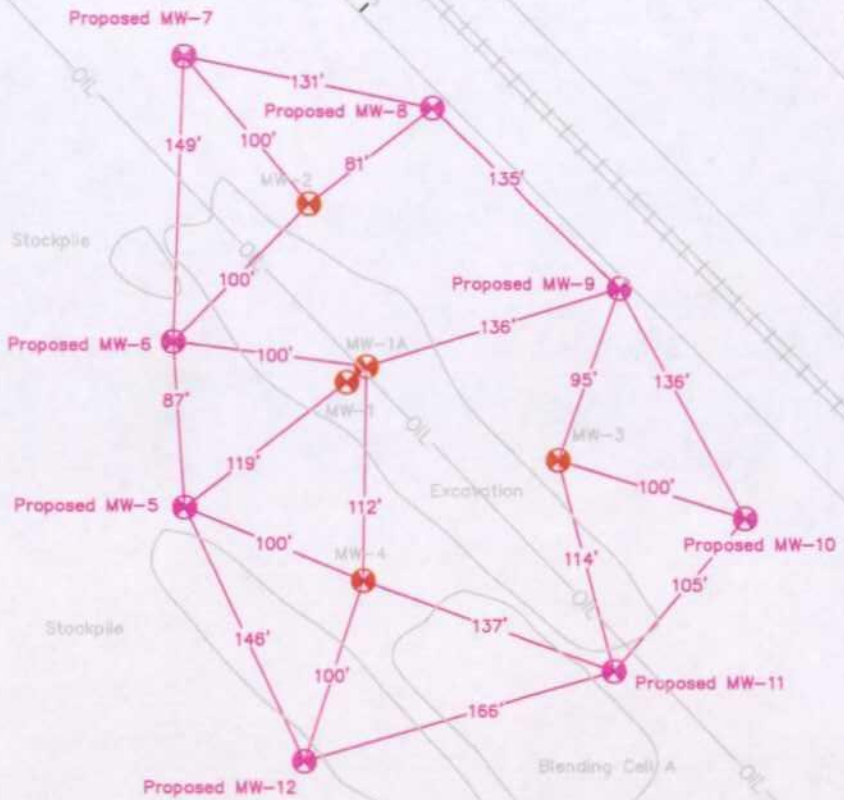


Figure 5: PSH Thicknesses for Groundwater Monitoring Wells MW-1 through MW-4 from 10/08/04 through 12/31/04, Plains Pipeline, L.P., 8" Moore to Jal #1, Lea County, New Mexico.



LEGEND

Monitoring Well

OIL Oil Pipeline

Figure 6 Proposed Groundwater Monitoring Well Location Map Plains Pipeline, L.P. 8" Moore to Jal #1	Lea County, New Mexico SE 1/4 of the NW 1/4, Sec. 16, T17S, R37E N 32 50' 13.8" W 103° 15' 25.3" Elevation: 3,770 feet amsl	DWG By: Iain Olness March 2005 0 100 200 Feet	REVISED: SHEET 1 of 1	N

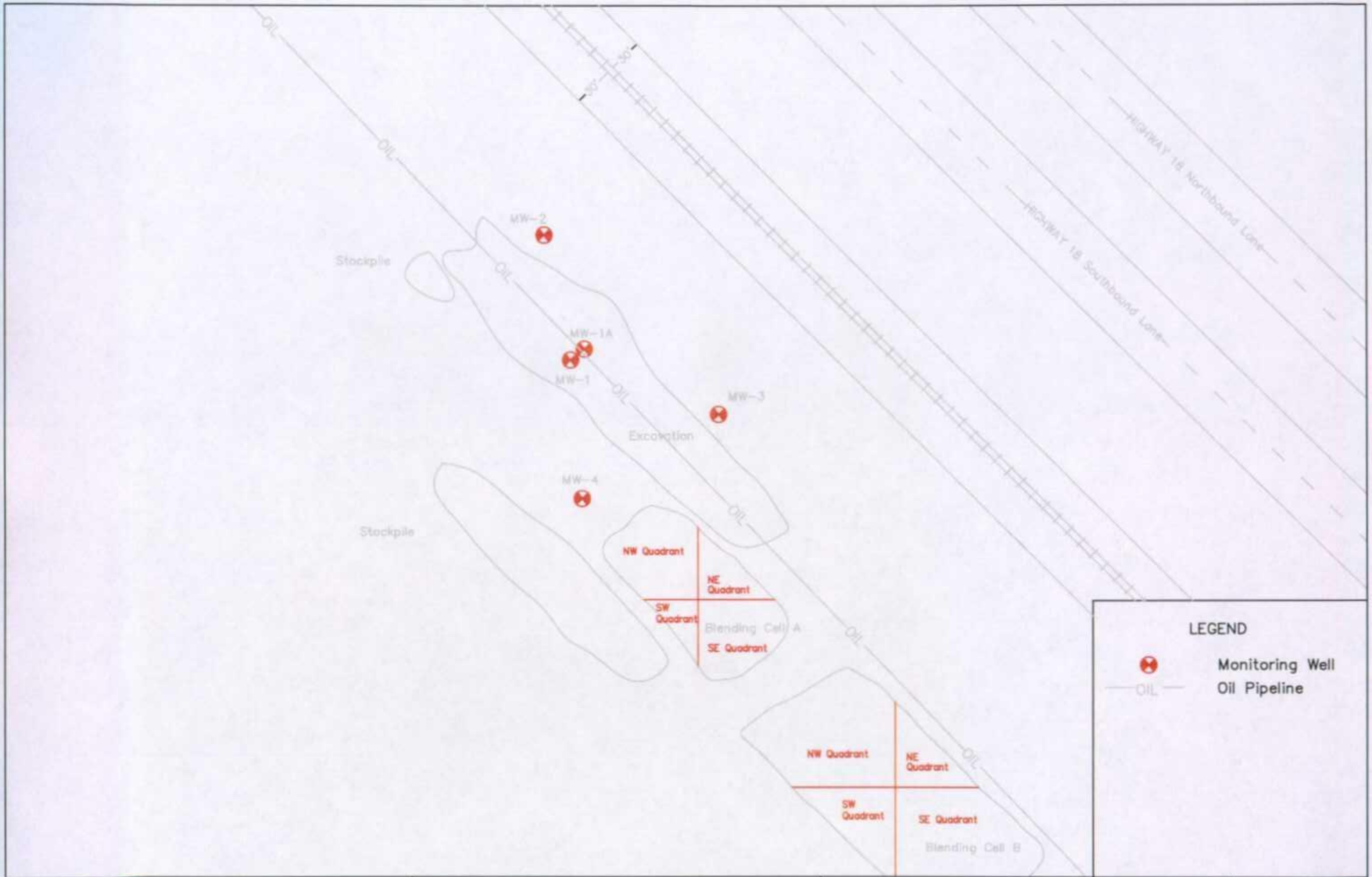


Figure 7 Land Treatment Sampling Location Map Plains Pipeline, L.P. 8" Moore to Jal #1	Lea County, New Mexico SE 1/4 of the NW 1/4, Sec. 16, T17S, R37E N 32 50' 13.8" W 103° 15' 25.3" Elevation: 3,770 feet amsl	DWG By: Iain Olness March 2005	REVISED: SHEET 1 of 1

TABLES

TABLE 1

Relative Groundwater Elevations and Phase Separated Hydrocarbon Thicknesses

8" Moore #1 - Ref. #2002-10270

Monitor Well	Date Gauged	Relative Top of Casing Elevation (feet)*	Depth to PSH Below Top of Casing (feet)	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)*	Phase Separated Hydrocarbon Thickness (feet)	Volume Recovered (gallons)	Cumulative Recovery (gallons)
MW-1	22-Sep-04	3,766.03	56.74	67.29	3,708.24	10.55		
	08-Oct-04		52.27	75.25	3,711.46	22.98	35	35
	14-Oct-04		53.67	71.20	3,710.61	17.53	20	55
	20-Oct-04		54.64	68.31	3,710.02	13.67	17	72
	29-Oct-04		56.08	63.66	3,709.19	7.58	7	79
	04-Nov-04		57.49	58.46	3,708.44	0.97	1.5	80.5
	10-Nov-04		57.69	58.40	3,708.27	0.71	0.75	81.25
	17-Nov-04		57.88	58.22	3,708.12	0.34	0.25	81.5
	24-Nov-04		57.91	58.13	3,708.10	0.22	0.5	82
	02-Dec-04		57.75	58.67	3,708.19	0.92	1	83
	08-Dec-04		57.70	58.64	3,708.24	0.94	0.25	83.25
	15-Dec-04		57.89	59.15	3,708.01	1.26	1	84.25
	27-Dec-04		58.20	58.64	3,707.79	0.44	0.125	84.38
	29-Dec-04		58.17	58.60	3,707.82	0.43	0.0625	84.44
MW-1A	22-Sep-04	3,765.34	Well Installed on September 29, 2004					
	08-Oct-04		53.48	56.38	3,711.57	2.90	5	5
	14-Oct-04		53.25	68.36	3,710.58	15.11	16	21
	20-Oct-04		54.11	65.92	3,710.05	11.81	12.5	33.5
	29-Oct-04			55.09	3,710.25		9	42.5
	04-Nov-04		55.51	63.71	3,709.01	8.20	19.5	62
	10-Nov-04		55.72	63.49	3,708.84	7.77	8	70
	17-Nov-04		55.93	63.49	3,708.65	7.56	7	77
	24-Nov-04		55.23	66.10	3,709.02	10.87	8	85
	02-Dec-04		55.26	65.63	3,709.04	10.37	9	94
	08-Dec-04		55.22	65.60	3,709.08	10.38	8	102
	15-Dec-04		56.06	63.65	3,708.52	7.59	7	109
	27-Dec-04		56.35	63.59	3,708.27	7.24	7	116
	29-Dec-04		56.34	63.58	3,708.28	7.24	6	122
MW-2	22-Sep-04	3,770.91						
	08-Oct-04							
	14-Oct-04							
	20-Oct-04		Well Installed on October 23, 2004					
	29-Oct-04		61.85	Interface Meter Malfunctioned - no depth to water			3	3
	04-Nov-04		61.70	65.44	3,708.84	3.74	10	13
	10-Nov-04		61.48	67.15	3,708.86	5.67	7	20
	17-Nov-04		61.72	66.74	3,708.69	5.02	5	25
	24-Nov-04		61.81	67.10	3,708.57	5.29	5	30
	02-Dec-04		61.44	68.41	3,708.77	6.97	6	36
	08-Dec-04		61.38	68.39	3,708.83	7.01	5	41
	15-Dec-04		61.52	68.86	3,708.66	7.34	7	48
	27-Dec-04		61.65	69.09	3,708.52	7.44	6	54
	29-Dec-04		61.66	69.08	3,708.51	7.42	6	60
MW-3	22-Sep-04	3,769.96						
	08-Oct-04							
	14-Oct-04							
	20-Oct-04		Well Installed on October 24, 2004					
	29-Oct-04		62.90	72.15	3,706.14	9.25	7	7
	04-Nov-04		60.05	70.21	3,708.89	10.16	21	28

TABLE 1

Relative Groundwater Elevations and Phase Separated Hydrocarbon Thicknesses

8" Moore #1 - Ref. #2002-10270

Monitor Well	Date Gauged	Relative Top of Casing Elevation (feet)*	Depth to PSH Below Top of Casing (feet)	Depth to Water Below Top of Casing (feet)	Corrected Relative Groundwater Elevation (feet)*	Phase Separated Hydrocarbon Thickness (feet)	Volume Recovered (gallons)	Cumulative Recovery (gallons)
MW-3 (cont.)	10-Nov-04		60.19	70.25	3,708.76	10.06	9	37
	17-Nov-04		60.34	70.26	3,708.63	9.92	8	45
	24-Nov-04		60.50	70.26	3,708.48	9.76	8	53
	02-Dec-04		60.52	70.10	3,708.48	9.58	8	61
	08-Dec-04		60.48	70.02	3,708.53	9.54	7	68
	15-Dec-04		60.68	70.22	3,708.33	9.54	8	76
	27-Dec-04		60.81	70.39	3,708.19	9.58	8	84
	29-Dec-04		60.78	70.39	3,708.22	9.61	8	92
MW-4	22-Sep-04	3,772.74						
	08-Oct-04							
	14-Oct-04							
	20-Oct-04		Well Installed on October 22, 2004					
	29-Oct-04		59.80	71.07	3,711.81	11.27		
	04-Nov-04		63.06	72.51	3,708.74	9.45	20.5	20.5
	10-Nov-04		63.12	72.78	3,708.65	9.66	16	36.5
	17-Nov-04		63.21	73.09	3,708.54	9.88	16	52.5
	24-Nov-04		63.30	73.31	3,708.44	10.01	16.5	69
	02-Dec-04		63.31	73.30	3,708.43	9.99	17	86
	08-Dec-04		63.27	73.29	3,708.47	10.02	18	104
	15-Dec-04		63.39	73.52	3,708.34	10.13	17	121
	27-Dec-04		63.53	73.71	3,708.19	10.18	19	140
	29-Dec-04		63.54	73.61	3,708.19	10.07	19	159
TOTAL VOLUME RECOVERED TO DATE (GALLONS)							517	

** = Wells are referenced to the TOC of groundwater monitoring well MW-2, which was set to an elevation of 100.00 feet.*

- - = Not Detected

If cell is blank, the well was not gauged

NS = Not Surveyed

Gray highlighted cells indicate current year's data

TABLE 2

Summary of Groundwater Monitoring Well Results (Soil)

8" Moore to Jal #1 - Ref #2002-10270

Sample ID	Sample Date	Soil Boring	PID Readings (ppm)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	m,p-Xylenes (mg/Kg)	o-Xylene (mg/Kg)	Total BTEX (mg/Kg)	TPH (as gasoline) (mg/Kg)	TPH (as diesel) (mg/Kg)	Total TPH (mg/Kg)
2002-10270 (10-12)	26-Jul-04	MW-1	2,982	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (15-17)			2,565	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (20-22)			1,574	**14.6**	43.6	23.3	34.3	15.4	**131**	4,210	3,950	**8,160**
2002-10270 (25-27)			1,558	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (30-32)			1,160	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (35-37)			1,049	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (40-42)			927	**80.0**	144	74.1	94.5	45.5	**438**	7,710	6,450	**14,200**
2002-10270 (45-47)			1,125	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (50-52)			1,227	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (55-57)			2,124	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (60-62)			710	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (65-67)			906	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002-10270 (70-72)			1,543	**11.6**	25.1	13.9	20.0	9.56	**80.2**	2,280	2,870	**5,150**
MW-2 (20-25)	23-Oct-04	MW-2	62.2	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	<10.0	<10.0
MW-2 (25-30)			59.8	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (30-35)			68.4	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (35-40)			53.7	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (40-45)			73.3	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	6.59[4]	<10.0
MW-2 (45-50)			224	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (50-55)			1,838	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (55-60)			875	139	434	158	308	105	1,140	8,550	9,390	17,900
MW-2 (60-65)			800	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (15-20)	24-Oct-04	MW-3	12.1	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (20-25)			100	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	6.86[4]	17.4	17.4
MW-3 (25-30)			40.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (30-35)			75.4	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (35-40)			144	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (40-45)			216	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (45-50)			350	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (50-55)			1,653	0.226	2.97	2.97	6.64	2.59	15.4	481	1,100	**1,580**
MW-3 (55-60)			534	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (60-65)			740	**139**	252	107	159	58	**715**	4,930	5,790	**10,720**
MW-4 (15-20)	22-Oct-04	MW-4	153	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.125	<10.0	7.84[4]	<10.0
MW-4 (20-25)			18.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (25-30)			155	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (30-35)			120	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (35-40)			67.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (40-45)			254	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (45-50)			186	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (50-55)			249	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (55-60)			820	**205**	460	187	328	127	**1,310**	9,970	11,100	**21,100**
MW-4 (60-65)			596	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 (65-70)			447	0.295	0.253	0.0567	0.115	0.0419	0.762	81.9	165	**247**
NMOCD Remedial Thresholds				**10**					**50**			**100**

[1] *Bolded values are in excess of the NMOCD Remediation Thresholds*

[2] *NA : Not Analyzed*

[3] *NS : No Sample Recovery*

[4] *Detected, but below the Reporting Limit; therefore, result is an estimated concentration (CLP-J Flag).*

TABLE 3

Summary of Land Treatment Analytical Results (Soil)

8" Moore to Jal #1 - Ref #2002-10270

Sample ID	Sample Date	Sample Location	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	m,p-Xylenes (mg/Kg)	o-Xylene (mg/Kg)	Total BTEX (mg/Kg)	TPH (as gasoline) (mg/Kg)	TPH (as diesel) (mg/Kg)	Total TPH (mg/Kg)
NE-A	15-Dec-04	Northeast Quadrant of Cell A	NA	NA	NA	NA	NA	NA	<5	1,310	**1,310**
SE-A	15-Dec-04	Southeast Quadrant of Cell A	NA	NA	NA	NA	NA	NA	<5	664	**664**
SW-A	15-Dec-04	Southwest Quadrant of Cell A	NA	NA	NA	NA	NA	NA	<5	542	**542**
NW-A	15-Dec-04	Northwest Quadrant of Cell A	NA	NA	NA	NA	NA	NA	<5	987	**987**
SE-B	15-Dec-04	Southeast Quadrant of Cell B	NA	NA	NA	NA	NA	NA	<5	1,140	**1,140**
SW-B	15-Dec-04	Southwest Quadrant of Cell B	NA	NA	NA	NA	NA	NA	<5	1,470	**1,470**
NE-B	15-Dec-04	Northeast Quadrant of Cell B	NA	NA	NA	NA	NA	NA	<5	1,240	**1,240**
NW-B	15-Dec-04	Northwest Quadrant of Cell B	NA	NA	NA	NA	NA	NA	<5	1,170	**1,170**
NMOCD Remedial Thresholds			**10**					**50**			**100**

[1] *Bolded values are in excess of the NMOCD Remediation Thresholds*

[2] *NA : Not Analyzed*

[3] *NS : Not Sampled*

APPENDICES

APPENDIX A

SOIL LABORATORY ANALYTICAL RESULTS

AND

CHAIN-OF-CUSTODY FORMS

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Jimmy Bryant
Plains All American EH & S
1301 S. County Road 1150
Midland, TX 79706-4476

Project: 8 inch Moore to Jal #1
Project Number: 2002-10270
Location: UL-F, Section 6 T17S, R37E

Lab Order Number: 4G29005

Report Date: 08/03/04

Plains All American EH & S	Project: 8 inch Moore to Jal #1	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: 2002-10270	**Reported:**
Midland TX, 79706-4476	Project Manager: Jimmy Bryant	08/03/04 17:06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
2002-10270 MW-1 (20')	4G29005-01	Soil	07/26/04 10:40	07/29/04 10:50
2002-10270 MW-1 (40')	4G29005-02	Soil	07/26/04 11:05	07/29/04 10:50
2002-10270 MW-1 (70')	4G29005-03	Soil	07/26/04 12:07	07/29/04 10:50

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
2002-10270 MW-1 (20') (4G29005-01) Soil									
Benzene	**14.6**	0.0250	mg/kg dry	25	EH40207	07/30/04	07/30/04	EPA 8021B	
Toluene	**43.6**	0.0250	"	"	"	"	"	"	
Ethylbenzene	**23.3**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**34.3**	0.0250	"	"	"	"	"	"	
Xylene (o)	**15.4**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*2160 %*	*80-120*		"	"	"	"	*S-04*
Surrogate: 4-Bromofluorobenzene		*83.1 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**4210**	10.0	mg/kg dry	1	EG42903	07/29/04	08/03/04	EPA 8015M	
Diesel Range Organics >C12-C35	**3950**	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**8160**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*156 %*	*70-130*		"	"	"	"	*S-04*
Surrogate: 1-Chlorooctadecane		*121 %*	*70-130*		"	"	"	"	
2002-10270 MW-1 (40') (4G29005-02) Soil									
Benzene	**80.0**	0.100	mg/kg dry	100	EH40207	07/30/04	07/30/04	EPA 8021B	
Toluene	**144**	0.100	"	"	"	"	"	"	
Ethylbenzene	**74.1**	0.100	"	"	"	"	"	"	
Xylene (p/m)	**94.5**	0.100	"	"	"	"	"	"	
Xylene (o)	**45.5**	0.100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*1660 %*	*80-120*		"	"	"	"	*S-04*
Surrogate: 4-Bromofluorobenzene		*135 %*	*80-120*		"	"	"	"	*S-04*
Gasoline Range Organics C6-C12	**7710**	50.0	mg/kg dry	5	EG42903	07/29/04	08/03/04	EPA 8015M	
Diesel Range Organics >C12-C35	**6450**	50.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**14200**	50.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*34.0 %*	*70-130*		"	"	"	"	*S-06*
Surrogate: 1-Chlorooctadecane		*27.2 %*	*70-130*		"	"	"	"	*S-06*
2002-10270 MW-1 (70') (4G29005-03) Soil									
Benzene	**11.6**	0.0250	mg/kg dry	25	EH40207	07/30/04	07/30/04	EPA 8021B	
Toluene	**25.1**	0.0250	"	"	"	"	"	"	
Ethylbenzene	**13.9**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**20.0**	0.0250	"	"	"	"	"	"	
Xylene (o)	**9.56**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*1010 %*	*80-120*		"	"	"	"	*S-04*
Surrogate: 4-Bromofluorobenzene		*140 %*	*80-120*		"	"	"	"	*S-04*
Gasoline Range Organics C6-C12	**2280**	10.0	mg/kg dry	1	EG42903	07/29/04	08/03/04	EPA 8015M	
Diesel Range Organics >C12-C35	**2870**	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**5150**	10.0	"	"	"	"	"	"	

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
2002-10270 MW-1 (70') (4G29005-03) Soil									
Surrogate: 1-Chlorooctane		*130 %*	*70-130*		*EG42903*	*07/29/04*	*08/03/04*	*EPA 8015M*	
Surrogate: 1-Chlorooctadecane		*97.8 %*	*70-130*		"	"	"	"	

General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
2002-10270 MW-1 (20') (4G29005-01) Soil									
% Solids	**93.0**		%	1	EG43009	07/29/04	07/29/04	% calculation	
2002-10270 MW-1 (40') (4G29005-02) Soil									
% Solids	**94.0**		%	1	EG43009	07/29/04	07/29/04	% calculation	
2002-10270 MW-1 (70') (4G29005-03) Soil									
% Solids	**82.0**		%	1	EG43009	07/29/04	07/29/04	% calculation	

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EG42903 - Solvent Extraction (GC)										
Blank (EG42903-BLK1)				Prepared: 07/29/04 Analyzed: 08/02/04						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*45.4*		*mg/kg*	*50.0*		*90.8*	*70-130*			
Surrogate: 1-Chlorooctadecane	*37.2*		*"*	*50.0*		*74.4*	*70-130*			
Blank (EG42903-BLK2)				Prepared: 07/29/04 Analyzed: 08/03/04						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*52.8*		*mg/kg*	*50.0*		*106*	*70-130*			
Surrogate: 1-Chlorooctadecane	*36.8*		*"*	*50.0*		*73.6*	*70-130*			
LCS (EG42903-BS1)				Prepared: 07/29/04 Analyzed: 08/02/04						
Gasoline Range Organics C6-C12	25.7	10.0	mg/kg wet	25.0		103	75-125			
Diesel Range Organics >C12-C35	27.6	10.0	"	25.0		110	75-125			
Total Hydrocarbon C6-C35	53.3	10.0	"	50.0		107	75-125			
Surrogate: 1-Chlorooctane	*37.4*		*mg/kg*	*50.0*		*74.8*	*70-130*			
Surrogate: 1-Chlorooctadecane	*37.5*		*"*	*50.0*		*75.0*	*70-130*			
LCS (EG42903-BS2)				Prepared: 07/29/04 Analyzed: 08/03/04						
Gasoline Range Organics C6-C12	27.9	10.0	mg/kg wet	25.0		112	75-125			
Diesel Range Organics >C12-C35	27.9	10.0	"	25.0		112	75-125			
Total Hydrocarbon C6-C35	55.8	10.0	"	50.0		112	75-125			
Surrogate: 1-Chlorooctane	*53.1*		*mg/kg*	*50.0*		*106*	*70-130*			
Surrogate: 1-Chlorooctadecane	*35.4*		*"*	*50.0*		*70.8*	*70-130*			
Calibration Check (EG42903-CCV1)				Prepared: 07/29/04 Analyzed: 08/02/04						
Gasoline Range Organics C6-C12	43.3		mg/kg	50.0		86.6	80-120			
Diesel Range Organics >C12-C35	45.6		"	50.0		91.2	80-120			
Total Hydrocarbon C6-C35	88.9		"	100		88.9	80-120			
Surrogate: 1-Chlorooctane	*40.5*		*"*	*50.0*		*81.0*	*70-130*			
Surrogate: 1-Chlorooctadecane	*35.4*		*"*	*50.0*		*70.8*	*70-130*			

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EG42903 - Solvent Extraction (GC)										
Calibration Check (EG42903-CCV2)				Prepared: 07/29/04 Analyzed: 08/03/04						
Gasoline Range Organics C6-C12	54.0		mg/kg	50.0		108	80-120			
Diesel Range Organics >C12-C35	52.2		"	50.0		104	80-120			
Total Hydrocarbon C6-C35	106		"	100		106	80-120			
Surrogate: 1-Chlorooctane	*51.9*		*"*	*50.0*		*104*	*70-130*			
Surrogate: 1-Chlorooctadecane	*35.1*		*"*	*50.0*		*70.2*	*70-130*			
Matrix Spike (EG42903-MS1)		**Source: 4G29002-09**		Prepared: 07/29/04 Analyzed: 08/03/04						
Gasoline Range Organics C6-C12	478	10.0	mg/kg dry	532	ND	89.8	75-125			
Diesel Range Organics >C12-C35	491	10.0	"	532	13.7	89.7	75-125			
Total Hydrocarbon C6-C35	969	10.0	"	1060	13.7	90.1	75-125			
Surrogate: 1-Chlorooctane	*63.9*		*mg/kg*	*50.0*		*128*	*70-130*			
Surrogate: 1-Chlorooctadecane	*35.1*		*"*	*50.0*		*70.2*	*70-130*			
Matrix Spike (EG42903-MS2)		**Source: 4G29007-02**		Prepared: 07/29/04 Analyzed: 08/03/04						
Gasoline Range Organics C6-C12	605	10.0	mg/kg dry	568	ND	107	75-125			
Diesel Range Organics >C12-C35	558	10.0	"	568	ND	98.2	75-125			
Total Hydrocarbon C6-C35	1160	10.0	"	1140	ND	102	75-125			
Surrogate: 1-Chlorooctane	*56.2*		*mg/kg*	*50.0*		*112*	*70-130*			
Surrogate: 1-Chlorooctadecane	*38.2*		*"*	*50.0*		*76.4*	*70-130*			
Matrix Spike Dup (EG42903-MSD1)		**Source: 4G29002-09**		Prepared: 07/29/04 Analyzed: 08/03/04						
Gasoline Range Organics C6-C12	568	10.0	mg/kg dry	532	ND	107	75-125	17.2	20	
Diesel Range Organics >C12-C35	568	10.0	"	532	13.7	104	75-125	14.5	20	
Total Hydrocarbon C6-C35	1140	10.0	"	1060	13.7	106	75-125	16.2	20	
Surrogate: 1-Chlorooctane	*64.4*		*mg/kg*	*50.0*		*129*	*70-130*			
Surrogate: 1-Chlorooctadecane	*47.7*		*"*	*50.0*		*95.4*	*70-130*			
Matrix Spike Dup (EG42903-MSD2)		**Source: 4G29007-02**		Prepared: 07/29/04 Analyzed: 08/03/04						
Gasoline Range Organics C6-C12	536	10.0	mg/kg dry	568	ND	94.4	75-125	12.1	20	
Diesel Range Organics >C12-C35	576	10.0	"	568	ND	101	75-125	3.17	20	
Total Hydrocarbon C6-C35	1110	10.0	"	1140	ND	97.4	75-125	4.41	20	
Surrogate: 1-Chlorooctane	*60.5*		*mg/kg*	*50.0*		*121*	*70-130*			
Surrogate: 1-Chlorooctadecane	*37.5*		*"*	*50.0*		*75.0*	*70-130*			

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH40207 - EPA 5030C (GC)										
Blank (EH40207-BLK1)				Prepared & Analyzed: 07/30/04						
Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	*89.2*		*ug/kg*	*100*		*89.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*90.6*		"	*100*		*90.6*	*80-120*			
LCS (EH40207-BS1)				Prepared & Analyzed: 07/30/04						
Benzene	106		ug/kg	100		106	80-120			
Toluene	102		"	100		102	80-120			
Ethylbenzene	99.7		"	100		99.7	80-120			
Xylene (p/m)	210		"	200		105	80-120			
Xylene (o)	107		"	100		107	80-120			
Surrogate: a,a,a-Trifluorotoluene	*104*		"	*100*		*104*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*103*		"	*100*		*103*	*80-120*			
Calibration Check (EH40207-CCV1)				Prepared: 07/30/04 Analyzed: 07/31/04						
Benzene	104		ug/kg	100		104	80-120			
Toluene	101		"	100		101	80-120			
Ethylbenzene	95.4		"	100		95.4	80-120			
Xylene (p/m)	203		"	200		102	80-120			
Xylene (o)	106		"	100		106	80-120			
Surrogate: a,a,a-Trifluorotoluene	*93.2*		"	*100*		*93.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*92.1*		"	*100*		*92.1*	*80-120*			
Matrix Spike (EH40207-MS1)	**Source: 4G29006-03**			Prepared & Analyzed: 07/30/04						
Benzene	102		ug/kg	100	ND	102	80-120			
Toluene	98.2		"	100	ND	98.2	80-120			
Ethylbenzene	95.6		"	100	ND	95.6	80-120			
Xylene (p/m)	206		"	200	ND	103	80-120			
Xylene (o)	104		"	100	ND	104	80-120			
Surrogate: a,a,a-Trifluorotoluene	*99.4*		"	*100*		*99.4*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*101*		"	*100*		*101*	*80-120*			

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH40207 - EPA 5030C (GC)										
Matrix Spike Dup (EH40207-MSD1)	**Source: 4G29006-03**			Prepared & Analyzed: 07/30/04						
Benzene	106		ug/kg	100	ND	106	80-120	3.85	20	
Toluene	102		"	100	ND	102	80-120	3.80	20	
Ethylbenzene	99.9		"	100	ND	99.9	80-120	4.40	20	
Xylene (p/m)	213		"	200	ND	106	80-120	2.87	20	
Xylene (o)	108		"	100	ND	108	80-120	3.77	20	
Surrogate: a,a,a-Trifluorotoluene	*98.9*		*"*	*100*		*98.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*96.6*		*"*	*100*		*96.6*	*80-120*			

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EG43009 - General Preparation (Prep)										
Blank (EG43009-BLK1)				Prepared & Analyzed: 07/29/04						
% Solids	100		%							
Duplicate (EG43009-DUP1)		**Source: 4G29001-01**		Prepared & Analyzed: 07/29/04						
% Solids	87.0		%		87.0			0.00	20	

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Celey D. Keene Date: 08/04/04

Raland K. Tuttle, QA Officer
Celey D. Keene, Lab Director, Org. Tech Director
Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sara Molina, Chemist
Sandra Biezugbe, Lab Tech.

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

Project Manager: Jimmy Bryant
Company Name: Plains All American
Company Address: 5805 E. HIGHWAY 80
City/State/Zip: MIDLAND, TX 79701
Telephone No: (505) 631-3095

Project Name: 8 inch Moore to Jal #1
Project #: 2002-10270
Project Loc: UL-F, Section 6 T17S, R37E
PO#:

Sampler Signature: EPI - Environmental Consultant

LAB ID 4G29005	SAMPLE IDENTIFICATION	Date Sampled	Time Sampled	No. of Containers	Preservative: ICE	HNO	HCl	NaOH	HSO	None	Other (Specify)	Type: Water	Sludge	Soil	Other (Specify)	Analyze For: TDS/Cl/SAR/EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals *	Volatiles *	Semivolatiles *	BTEX 8021B/5030	Reactivity	Corrosivity	Ignitiability	Chlorides	Sulfates		RUSH TAT	Standard TAT
-01	2002-10270 MW-1(20')	26-Jul	10:40	1	X									X					X				X								X
-02	2002-10270 MW-1(40')	26-Jul	11:05	1	X									X					X				X								X
-03	2002-10270 MW-1(70')	26-Jul	12:07	1	X									X					X				X								X

Special Instructions

FAX RESULTS TO Pat McCasland ASAP [505-394-2601]

Sample Containers Intact? Y N
Temperature Upon Request
Laboratory Comments:
0.5°C
4oz glass

Relinquished:	Date	Time	Received by:	Date	Time
Lain Olness	7/29/04	0640		7-29-04	6:40
Relinquished:	Date	Time	Received by:	Date	Time
	7-29-04	10:50	Joanne McMurry	7-29-04	1050

Environmental Lab of Texas
Variance / Corrective Action Report – Sample Log-In

Client: Plains All American

Date/Time: 07-29-04 @ 1130

Order #: 4G29005

Initials: JMM

Sample Receipt Checklist

Temperature of container/cooler?	(Yes)	No	0.5 C
Shipping container/cooler in good condition?	(Yes)	No	
Custody Seals intact on shipping container/cooler?	Yes	No	(Not present)
Custody Seals intact on sample bottles?	Yes	No	(Not present)
Chain of custody present?	(Yes)	No	
Sample Instructions complete on Chain of Custody?	(Yes)	No	
Chain of Custody signed when relinquished and received?	(Yes)	No	
Chain of custody agrees with sample label(s)	(Yes)	No	
Container labels legible and intact?	(Yes)	No	
Sample Matrix and properties same as on chain of custody?	(Yes)	No	
Samples in proper container/bottle?	(Yes)	No	
Samples properly preserved?	(Yes)	No	
Sample bottles intact?	(Yes)	No	
Preservations documented on Chain of Custody?	(Yes)	No	
Containers documented on Chain of Custody?	(Yes)	No	
Sufficient sample amount for indicated test?	(Yes)	No	
All samples received within sufficient hold time?	(Yes)	No	
VOC samples have zero headspace?	(Yes)	No	Not Applicable

Other observations:

_____

_____

_____

Variance Documentation:

Contact Person: - _____ Date/Time: _____ Contacted by: _____

Regarding:

_____

_____

_____

Corrective Action Taken:

_____

_____

_____

_____

_____

_____

_____

_____

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Daniel Bryant

Plains All American EH & S

1301 S. County Road 1150

Midland, TX 79706-4476

Project: 8 inch Moore #1

Project Number: 2002-10270

Location: None Given

Lab Order Number: 4J29002

Report Date: 11/04/04

Plains All American EH & S	Project: 8 inch Moore #1	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: 2002-10270	**Reported:**
Midland TX, 79706-4476	Project Manager: Daniel Bryant	11/04/04 16:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-2 (20-25)	4J29002-01	Soil	10/23/04 08:27	10/29/04 11:03
MW-2 (45-50)	4J29002-02	Soil	10/23/04 09:27	10/29/04 11:03
MW-2 (55-60)	4J29002-03	Soil	10/23/04 09:46	10/29/04 11:03
MW-3 (20-25)	4J29002-04	Soil	10/24/04 09:23	10/29/04 11:03
MW-3 (50-55)	4J29002-05	Soil	10/24/04 10:09	10/29/04 11:03
MW-3 (60-65)	4J29002-06	Soil	10/24/04 10:34	10/29/04 11:03
MW-4 (15-20)	4J29002-07	Soil	10/22/04 09:23	10/29/04 11:03
MW-4 (55-60)	4J29002-08	Soil	10/22/04 10:21	10/29/04 11:03
MW-4 (65-70)	4J29002-09	Soil	10/22/04 10:51	10/29/04 11:03

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-2 (20-25) (4J29002-01) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EK40203	10/29/04	11/01/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*86.3 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*88.8 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EJ42907	10/29/04	10/30/04	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*123 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*125 %*	*70-130*		"	"	"	"	
MW-2 (45-50) (4J29002-02) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EK40203	10/29/04	11/01/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*84.8 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*90.6 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EJ42907	10/29/04	10/30/04	EPA 8015M	
Diesel Range Organics >C12-C35	**J [6.59]**	10.0	"	"	"	"	"	"	J
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*92.4 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*103 %*	*70-130*		"	"	"	"	
MW-2 (55-60) (4J29002-03) Soil									
Benzene	**139**	1.00	mg/kg dry	1000	EK40203	10/29/04	11/02/04	EPA 8021B	
Toluene	**434**	1.00	"	"	"	"	"	"	
Ethylbenzene	**158**	1.00	"	"	"	"	"	"	
Xylene (p/m)	**308**	1.00	"	"	"	"	"	"	
Xylene (o)	**105**	1.00	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*416 %*	*80-120*		"	"	"	"	*S-04*
Surrogate: 4-Bromofluorobenzene		*122 %*	*80-120*		"	"	"	"	*S-04*
Gasoline Range Organics C6-C12	**8550**	50.0	mg/kg dry	5	EJ42907	10/29/04	11/01/04	EPA 8015M	
Diesel Range Organics >C12-C35	**9390**	50.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**17900**	50.0	"	"	"	"	"	"	

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-2 (55-60) (4J29002-03) Soil									
Surrogate: 1-Chlorooctane		*35.8 %*	*70-130*		*EJ42907*	*10 29 04*	*11 01 04*	*EPA 8015M*	*S-06*
Surrogate: 1-Chlorooctadecane		*15.6 %*	*70-130*		"	"	"	"	*S-06*
MW-3 (20-25) (4J29002-04) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EK40306	11/02/04	11/02/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*93.5 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*100 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**J [6.86]**	10.0	mg/kg dry	1	EJ42907	10/29/04	10/30/04	EPA 8015M	J
Diesel Range Organics >C12-C35	**17.4**	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**17.4**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*164 %*	*70-130*		"	"	"	"	*S-06*
Surrogate: 1-Chlorooctadecane		*187 %*	*70-130*		"	"	"	"	*S-06*
MW-3 (50-55) (4J29002-05) Soil									
Benzene	**0.226**	0.0250	mg/kg dry	25	EK40306	11/02/04	11/02/04	EPA 8021B	
Toluene	**2.97**	0.0250	"	"	"	"	"	"	
Ethylbenzene	**2.97**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**6.64**	0.0250	"	"	"	"	"	"	
Xylene (o)	**2.59**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*171 %*	*80-120*		"	"	"	"	*S-04*
Surrogate: 4-Bromofluorobenzene		*123 %*	*80-120*		"	"	"	"	*S-04*
Gasoline Range Organics C6-C12	**481**	10.0	mg/kg dry	1	EJ42907	10/29/04	10/30/04	EPA 8015M	
Diesel Range Organics >C12-C35	**1100**	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**1580**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*104 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*114 %*	*70-130*		"	"	"	"	

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (60-65) (4J29002-06) Soil									
Benzene	**139**	0.200	mg/kg dry	200	EK40306	11/02/04	11/02/04	EPA 8021B	
Toluene	**252**	0.200	"	"	"	"	"	"	
Ethylbenzene	**107**	0.200	"	"	"	"	"	"	
Xylene (p/m)	**159**	0.200	"	"	"	"	"	"	
Xylene (o)	**58.4**	0.200	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*976 %*	*80-120*		"	"	"	"	*S-04*
Surrogate: 4-Bromofluorobenzene		*120 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**4930**	10.0	mg/kg dry	1	EJ42907	10/29/04	10/30/04	EPA 8015M	
Diesel Range Organics >C12-C35	**5790**	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**10700**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*124 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*86.2 %*	*70-130*		"	"	"	"	
MW-4 (15-20) (4J29002-07) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EK40306	11/02/04	11/03/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*91.5 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*105 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EJ42907	10/29/04	10/30/04	EPA 8015M	
Diesel Range Organics >C12-C35	**J [7.84]**	10.0	"	"	"	"	"	"	J
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*104 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*125 %*	*70-130*		"	"	"	"	
MW-4 (55-60) (4J29002-08) Soil									
Benzene	**205**	0.500	mg/kg dry	500	EK40306	11/02/04	11/02/04	EPA 8021B	
Toluene	**460**	0.500	"	"	"	"	"	"	
Ethylbenzene	**187**	0.500	"	"	"	"	"	"	
Xylene (p/m)	**328**	0.500	"	"	"	"	"	"	
Xylene (o)	**127**	0.500	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*900 %*	*80-120*		"	"	"	"	*S-04*
Surrogate: 4-Bromofluorobenzene		*113 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**9970**	50.0	mg/kg dry	5	EJ42907	10/29/04	11/01/04	EPA 8015M	
Diesel Range Organics >C12-C35	**11100**	50.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**21100**	50.0	"	"	"	"	"	"	

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-4 (55-60) (4J29002-08) Soil									
Surrogate: 1-Chlorooctane		*38.2 %*	*70-130*		*EJ42907*	*10 29 04*	*11 01 04*	*EPA 8015M*	*S-06*
Surrogate: 1-Chlorooctadecane		*20.4 %*	*70-130*		"	"	"	"	*S-06*
MW-4 (65-70) (4J29002-09) Soil									
Benzene	**0.295**	0.0250	mg/kg dry	25	EK40306	11/02/04	11/03/04	EPA 8021B	
Toluene	**0.253**	0.0250	"	"	"	"	"	"	
Ethylbenzene	**0.0567**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.115**	0.0250	"	"	"	"	"	"	
Xylene (o)	**0.0419**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*90.3 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*94.9 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	**81.9**	10.0	mg/kg dry	1	EJ42907	10/29/04	10/30/04	EPA 8015M	
Diesel Range Organics >C12-C35	**165**	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**247**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*95.0 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*115 %*	*70-130*		"	"	"	"	

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-2 (20-25) (4J29002-01) Soil									
% Moisture	**8.0**		%	1	EK40102	11/01/04	11/01/04	% calculation	
MW-2 (45-50) (4J29002-02) Soil									
% Moisture	**21.0**		%	1	EK40102	11/01/04	11/01/04	% calculation	
MW-2 (55-60) (4J29002-03) Soil									
% Moisture	**10.0**		%	1	EK40102	11/01/04	11/01/04	% calculation	
MW-3 (20-25) (4J29002-04) Soil									
% Moisture	**5.0**		%	1	EK40102	11/01/04	11/01/04	% calculation	
MW-3 (50-55) (4J29002-05) Soil									
% Moisture	**7.0**		%	1	EK40102	11/01/04	11/01/04	% calculation	
MW-3 (60-65) (4J29002-06) Soil									
% Moisture	**15.0**		%	1	EK40102	11/01/04	11/01/04	% calculation	
MW-4 (15-20) (4J29002-07) Soil									
% Moisture	**11.0**		%	1	EK40102	11/01/04	11/01/04	% calculation	
MW-4 (55-60) (4J29002-08) Soil									
% Moisture	**7.0**		%	1	EK40102	11/01/04	11/01/04	% calculation	
MW-4 (65-70) (4J29002-09) Soil									
% Moisture	**16.0**		%	1	EK40102	11/01/04	11/01/04	% calculation	

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EJ42907 - Solvent Extraction (GC)										
Blank (EJ42907-BLK1)				Prepared & Analyzed: 10/29/04						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*44.5*		*mg kg*	*50.0*		*89.0*	*70-130*			
Surrogate: 1-Chlorooctadecane	*48.5*		*"*	*50.0*		*97.0*	*70-130*			
Blank (EJ42907-BLK2)				Prepared: 10/29/04 Analyzed: 10/30/04						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*48.1*		*mg kg*	*50.0*		*96.2*	*70-130*			
Surrogate: 1-Chlorooctadecane	*48.8*		*"*	*50.0*		*97.6*	*70-130*			
LCS (EJ42907-BS1)				Prepared & Analyzed: 10/29/04						
Gasoline Range Organics C6-C12	473	10.0	mg/kg wet	500		94.6	75-125			
Diesel Range Organics >C12-C35	518	10.0	"	500		104	75-125			
Total Hydrocarbon C6-C35	991	10.0	"	1000		99.1	75-125			
Surrogate: 1-Chlorooctane	*51.4*		*mg kg*	*50.0*		*103*	*70-130*			
Surrogate: 1-Chlorooctadecane	*46.5*		*"*	*50.0*		*93.0*	*70-130*			
LCS (EJ42907-BS2)				Prepared: 10/29/04 Analyzed: 10/30/04						
Gasoline Range Organics C6-C12	518	10.0	mg/kg wet	500		104	75-125			
Diesel Range Organics >C12-C35	540	10.0	"	500		108	75-125			
Total Hydrocarbon C6-C35	1060	10.0	"	1000		106	75-125			
Surrogate: 1-Chlorooctane	*57.9*		*mg kg*	*50.0*		*116*	*70-130*			
Surrogate: 1-Chlorooctadecane	*60.2*		*"*	*50.0*		*120*	*70-130*			
LCS Dup (EJ42907-BSD2)				Prepared: 10/29/04 Analyzed: 10/30/04						
Gasoline Range Organics C6-C12	502	10.0	mg/kg wet	500		100	75-125	3.14	20	
Diesel Range Organics >C12-C35	551	10.0	"	500		110	75-125	2.02	20	
Total Hydrocarbon C6-C35	1050	10.0	"	1000		105	75-125	0.948	20	
Surrogate: 1-Chlorooctane	*56.2*		*mg kg*	*50.0*		*112*	*70-130*			
Surrogate: 1-Chlorooctadecane	*58.8*		*"*	*50.0*		*118*	*70-130*			

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EJ42907 - Solvent Extraction (GC)										
Calibration Check (EJ42907-CCV1)				Prepared & Analyzed: 10/29/04						
Gasoline Range Organics C6-C12	492		mg/kg	500		98.4	80-120			
Diesel Range Organics >C12-C35	506		"	500		101	80-120			
Total Hydrocarbon C6-C35	998		"	1000		99.8	80-120			
Surrogate: 1-Chlorooctane	*50.0*		"	*50.0*		*100*	*70-130*			
Surrogate: 1-Chlorooctadecane	*48.0*		"	*50.0*		*96.0*	*70-130*			
Calibration Check (EJ42907-CCV2)				Prepared: 10/29/04 Analyzed: 10/30/04						
Gasoline Range Organics C6-C12	500		mg/kg	500		100	80-120			
Diesel Range Organics >C12-C35	559		"	500		112	80-120			
Total Hydrocarbon C6-C35	1060		"	1000		106	80-120			
Surrogate: 1-Chlorooctane	*57.4*		"	*50.0*		*115*	*70-130*			
Surrogate: 1-Chlorooctadecane	*60.6*		"	*50.0*		*121*	*70-130*			
Matrix Spike (EJ42907-MS1)	**Source: 4J29003-04**			Prepared: 10/29/04 Analyzed: 10/30/04						
Gasoline Range Organics C6-C12	571	10.0	mg/kg dry	526	ND	109	75-125			
Diesel Range Organics >C12-C35	597	10.0	"	526	ND	113	75-125			
Total Hydrocarbon C6-C35	1170	10.0	"	1050	ND	111	75-125			
Surrogate: 1-Chlorooctane	*57.9*		*mg kg*	*50.0*		*116*	*70-130*			
Surrogate: 1-Chlorooctadecane	*61.9*		"	*50.0*		*124*	*70-130*			
Matrix Spike Dup (EJ42907-MSD1)	**Source: 4J29003-04**			Prepared: 10/29/04 Analyzed: 10/30/04						
Gasoline Range Organics C6-C12	566	10.0	mg/kg dry	526	ND	108	75-125	0.880	20	
Diesel Range Organics >C12-C35	548	10.0	"	526	ND	104	75-125	8.56	20	
Total Hydrocarbon C6-C35	1110	10.0	"	1050	ND	106	75-125	5.26	20	
Surrogate: 1-Chlorooctane	*54.7*		*mg kg*	*50.0*		*109*	*70-130*			
Surrogate: 1-Chlorooctadecane	*53.5*		"	*50.0*		*107*	*70-130*			

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EK40203 - EPA 5030C (GC)										
Blank (EK40203-BLK1)			Prepared & Analyzed: 10/29/04							
Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	*84.5*		*ug kg*	*100*		*84.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*88.5*		*"*	*100*		*88.5*	*80-120*			
LCS (EK40203-BS1)			Prepared & Analyzed: 10/29/04							
Benzene	89.4		ug/kg	100		89.4	80-120			
Toluene	91.6		"	100		91.6	80-120			
Ethylbenzene	96.7		"	100		96.7	80-120			
Xylene (p/m)	217		"	200		108	80-120			
Xylene (o)	104		"	100		104	80-120			
Surrogate: a,a,a-Trifluorotoluene	*95.9*		*"*	*100*		*95.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*108*		*"*	*100*		*108*	*80-120*			
Calibration Check (EK40203-CCV1)			Prepared: 10/29/04 Analyzed: 11/02/04							
Benzene	91.0		ug/kg	100		91.0	80-120			
Toluene	95.1		"	100		95.1	80-120			
Ethylbenzene	93.1		"	100		93.1	80-120			
Xylene (p/m)	204		"	200		102	80-120			
Xylene (o)	94.5		"	100		94.5	80-120			
Surrogate: a,a,a-Trifluorotoluene	*101*		*"*	*100*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*109*		*"*	*100*		*109*	*80-120*			
Matrix Spike (EK40203-MS1)	**Source: 4J28003-01**		Prepared: 10/29/04 Analyzed: 11/02/04							
Benzene	2370		ug/kg	2500	ND	94.8	80-120			
Toluene	2520		"	2500	20.4	100	80-120			
Ethylbenzene	2450		"	2500	ND	98.0	80-120			
Xylene (p/m)	5350		"	5000	32.5	106	80-120			
Xylene (o)	2410		"	2500	ND	96.4	80-120			
Surrogate: a,a,a-Trifluorotoluene	*100*		*"*	*100*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*105*		*"*	*100*		*105*	*80-120*			

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EK40203 - EPA 5030C (GC)										
Matrix Spike Dup (EK40203-MSD1)	**Source: 4J28003-01**			Prepared: 10/29/04 Analyzed: 11/02/04						
Benzene	2290		ug/kg	2500	ND	91.6	80-120	3.43	20	
Toluene	2380		"	2500	20.4	94.4	80-120	5.76	20	
Ethylbenzene	2270		"	2500	ND	90.8	80-120	7.63	20	
Xylene (p/m)	4950		"	5000	32.5	98.4	80-120	7.44	20	
Xylene (o)	2210		"	2500	ND	88.4	80-120	8.66	20	
Surrogate: a,a,a-Trifluorotoluene	*102*		"	*100*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*107*		"	*100*		*107*	*80-120*			
Batch EK40306 - EPA 5030C (GC)										
Blank (EK40306-BLK1)				Prepared & Analyzed: 11/02/04						
Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	*85.1*		*ug kg*	*100*		*85.1*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*95.3*		"	*100*		*95.3*	*80-120*			
LCS (EK40306-BS1)				Prepared & Analyzed: 11/02/04						
Benzene	95.3		ug/kg	100		95.3	80-120			
Toluene	99.5		"	100		99.5	80-120			
Ethylbenzene	103		"	100		103	80-120			
Xylene (p/m)	228		"	200		114	80-120			
Xylene (o)	107		"	100		107	80-120			
Surrogate: a,a,a-Trifluorotoluene	*105*		"	*100*		*105*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*115*		"	*100*		*115*	*80-120*			

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EK40306 - EPA 5030C (GC)										
Calibration Check (EK40306-CCV1)				Prepared: 11/02/04 Analyzed: 11/03/04						
Benzene	93.8		ug/kg	100		93.8	80-120			
Toluene	95.6		"	100		95.6	80-120			
Ethylbenzene	89.3		"	100		89.3	80-120			
Xylene (p/m)	197		"	200		98.5	80-120			
Xylene (o)	92.9		"	100		92.9	80-120			
Surrogate: a,a,a-Trifluorotoluene	*106*		"	*100*		*106*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*100*		"	*100*		*100*	*80-120*			
Matrix Spike (EK40306-MS1)	**Source: 4K01005-01**			Prepared: 11/02/04 Analyzed: 11/03/04						
Benzene	92.0		ug/kg	100	ND	92.0	80-120			
Toluene	93.6		"	100	ND	93.6	80-120			
Ethylbenzene	97.3		"	100	ND	97.3	80-120			
Xylene (p/m)	217		"	200	ND	108	80-120			
Xylene (o)	104		"	100	ND	104	80-120			
Surrogate: a,a,a-Trifluorotoluene	*102*		"	*100*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*116*		"	*100*		*116*	*80-120*			
Matrix Spike Dup (EK40306-MSD1)	**Source: 4K01005-01**			Prepared: 11/02/04 Analyzed: 11/03/04						
Benzene	93.1		ug/kg	100	ND	93.1	80-120	1.19	20	
Toluene	96.4		"	100	ND	96.4	80-120	2.95	20	
Ethylbenzene	98.0		"	100	ND	98.0	80-120	0.717	20	
Xylene (p/m)	218		"	200	ND	109	80-120	0.922	20	
Xylene (o)	103		"	100	ND	103	80-120	0.966	20	
Surrogate: a,a,a-Trifluorotoluene	*97.9*		"	*100*		*97.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*112*		"	*100*		*112*	*80-120*			

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EK40102 - General Preparation (Prep)										
Blank (EK40102-BLK1)				Prepared & Analyzed: 11/01/04						
% Moisture	0.0		%							
Duplicate (EK40102-DUP1)		**Source: 4J29002-01**		Prepared & Analyzed: 11/01/04						
% Moisture	8.0		%		8.0			0.00	20	

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Raland K Tuttle Date: 11/4/2004

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sandra Biezugbe, Lab Tech.

Environmental Labs of Texas

Chain of Custody Form

12600 West I-20 East, Odessa, TX 79763
(915) 563-1800 FAX: (915) 563-1713

Company Name	Environmental Plus, Inc.
EPI Project Manager	Iain Olness
Mailing Address	P.O. BOX 1558
City, State, Zip	Eunice New Mexico 88231
EPI Phone#/Fax#	505-394-3481 / 505-394-2601
Client Company	Plains All American
Facility Name	8" Moore #1
Project Reference	2002-10270
EPI Sampler Name	John Robinson

Bill To

PLAINS ALL AMERICAN PIPELINE, L.P.

Attn: ENV Accounts Payable
PO Box 4648,
Houston, TX 77210-4648

ANALYSIS REQUEST

LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE	ICE/COOL	OTHER	SAMPLING: DATE	TIME	BTEX 8021B	TPH 8015M	CHLORIDES (Cl^-)	SULFATES ($SO_4^{=}$)	pH	TCLP	OTHER >>>	PAH				
4J29002																										
-01	MW-2 (20-25)	C	1			X					X		23-Oct	8:27	X	X										
-02	MW-2 (45-50)	C	1			X					X		23-Oct	9:27	X	X										
-03	MW-2 (55-60)	C	1			X					X		23-Oct	9:46	X	X										
-04	MW-3 (20-25)	C	1			X					X		24-Oct	9:23	X	X										
-05	MW-3 (50-55)	C	1			X					X		24-Oct	10:09	X	X										
-06	MW-3 (60-65)	C	1			X					X		24-Oct	10:34	X	X										
-07	MW-4 (15-20)	C	1			X					X		22-Oct	9:23	X	X										
-08	MW-4 (55-60)	C	1			X					X		22-Oct	10:21	X	X										
-09	MW-4 (65-70)	C	1			X					X		22-Oct	10:51	X	X										
10																										

Sampler Relinquished: Iain Olness — Date: 10/24/04 — Time: 0705 — Received By: Brad Hall

Relinquished by: Brad Hall — Date: 10-29-04 — Time: 1103 — Received By: (lab staff) Jane McMurry

Delivered by:

Sample Cool & Intact: Yes / No

Checked By:

E-mail results to: iolness@hotmail.com and enviplus1@aol.com

REMARKS:

3.5°C
Hazglass on ice

Environmental Lab of Texas
Variance / Corrective Action Report – Sample Log-In

Client: Plains P/L

Date/Time: 10-29-04 @ 1115

Order #: 4J29002

Initials: JMM

Sample Receipt Checklist

Temperature of container/cooler?	(Yes)	No	3.5 C
Shipping container/cooler in good condition?	(Yes)	No	
Custody Seals intact on shipping container/cooler?	Yes	No	(Not present)
Custody Seals intact on sample bottles?	Yes	No	(Not present)
Chain of custody present?	(Yes)	No	
Sample Instructions complete on Chain of Custody?	(Yes)	No	
Chain of Custody signed when relinquished and received?	(Yes)	No	
Chain of custody agrees with sample label(s)	(Yes)	No	
Container labels legible and intact?	(Yes)	No	
Sample Matrix and properties same as on chain of custody?	(Yes)	No	
Samples in proper container/bottle?	(Yes)	No	
Samples properly preserved?	(Yes)	No	
Sample bottles intact?	(Yes)	No	
Preservations documented on Chain of Custody?	(Yes)	No	
Containers documented on Chain of Custody?	(Yes)	No	
Sufficient sample amount for indicated test?	(Yes)	No	
All samples received within sufficient hold time?	(Yes)	No	
VOC samples have zero headspace?	(Yes)	No	Not Applicable

Other observations:

Variance Documentation:

Contact Person: _____ Date/Time: _____ Contacted by: _____

Regarding:

Corrective Action Taken:

Environmental Labs of Texas

Chain of Custody Form

12600 West I-20 East, Odessa, TX 79763
(915) 563-1800 FAX: (915) 563-1713

Company Name	Environmental Plus, Inc.
EPI Project Manager	Iain Olness
Mailing Address	P.O. BOX 1558
City, State, Zip	Eunice New Mexico 88231
EPI Phone#/Fax#	505-394-3481 / 505-394-2601
Client Company	Plains All American
Facility Name	8" Moore #1
Project Reference	2002-10270
EPI Sampler Name	John Robinson

Bill To

PLAINS ALL AMERICAN PIPELINE, L.P.

Attn: ENV Accounts Payable
PO Box 4648,
Houston, TX 77210-4648

ANALYSIS REQUEST

LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE	ICE/COOL	OTHER	SAMPLING: DATE	TIME	BTEX 8021B	TPH 8015M	CHLORIDES (Cl^-)	SULFATES ($SO_4^{=}$)	pH	TCLP	OTHER >>>	PAH				
1	MW-2 (20-25)	C	1			X					X		23-Oct	8:27	X	X										
2	MW-2 (45-50)	C	1			X					X		23-Oct	9:27	X	X										
3	MW-2 (55-60)	C	1			X					X		23-Oct	9:46	X	X										
4	MW-3 (20-25)	C	1			X					X		24-Oct	9:23	X	X										
5	MW-3 (50-55)	C	1			X					X		24-Oct	10:09	X	X										
6	MW-3 (60-65)	C	1			X					X		24-Oct	10:34	X	X										
7	MW-4 (15-20)	C	1			X					X		22-Oct	9:23	X	X										
8	MW-4 (55-60)	C	1			X					X		22-Oct	10:21	X	X										
9	MW-4 (65-70)	C	1			X					X		22-Oct	10:51	X	X										
10																										

Sampler Relinquished: Iain Olness
Date: 10/29/04 Time: 0705
Received By: Brad Hall

Relinquished by: Brad Hall
Date: 10-29-04 Time: 1103
Received By: (lab staff) Jane McMurry

Delivered by:
Sample Cool & Intact: Yes No
Checked By:

E-mail results to: iolness@hotmail.com and enviplus1@aol.com

REMARKS:

COPY

3.5°C
4oz glass on ice

ANALYSYS INC.
[redacted] Montopolis Dr., Austin, [redacted] 78[redacted]
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Pat McCasland
Address: 2100 Ave. O
Eunice NM 88231

Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 162917 **Report Date:** 12/27/04
Project ID: 2002-10270
Sample Name: NE-A
Sample Matrix: soil
Date Received: 12/22/2004 **Time:** 10:20
Date Sampled: 12/15/2004 **Time:** 14:37

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA [1]

Parameter	Result	Units	RQL [5]	Blank	Date	Method [6]	Data Qual.[7]	Prec. [2]	Recov. [3]	CCV[4]	LCS[4]
TPH by GC (as diesel)	**1310**	mg/Kg	5	<5	12/27/04	8015 mod.	S,M	0	Mt.Intf.	90.8	82.6
TPH by GC (as diesel-ext)	---	---	---	---	12/23/04	3570m	---	---	---	---	---
TPH by GC (as gasoline)	<5	mg/Kg	5	<5	12/27/04	8015 mod.	J	8.1	98.1	92.8	97.4

Respectfully Submitted,

Dale Wagner

1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B =Analyte detected in associated method blank(s). S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference.

ANALYSYS INC.
3512 Montopolis Drive, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.	**Project ID:** 2002-10270	**Report#/Lab ID#:** 162917
Attn: Pat McCasland	**Sample Name:** NE-A	**Sample Matrix:** soil

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1-Chlorooctane	8015 mod.	87.4	30-125	---
p-Terphenyl	8015 mod.	182	30-160	X

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Report #/Lab ID#: 162917 **Matrix:** soil
Client: Environmental Plus, Inc. **Attn:** Pat McCasland
Project ID: 2002-10270
Sample Name: NE-A

Sample Temperature/Condition: <=6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is <= 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

Sample Bottles & Preservation:

☒ Sample received in appropriate container(s) and appear to be appropriately preserved.
☐ Sample received in appropriate container(s). State of sample preservation unknown.
☐ Sample received in inappropriate container(s) and/or with unknown state of preservation.

J flag Discussion:

A J flag data qualifier indicates (as required under TCEQ-TRRP reporting requirements) that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

Comments pertaining to Data Qualifiers and QC data:

Parameter	Qualif	Comment
TPH by GC (as diesel)	S,M	MS and/or MSD recoveries outside target recov. limits. LCS recovery in-limits; indicative of potential matrix interference as evidenced by M-flag.
TPH by GC (as gasoline)	J	See J-flag discussion above.
p-Terphenyl	X	Surrogate recovery outside advisory/acceptance limits. Typically, for samples with TPH/1005 hits, high recoveries are due to co-elution of
p-Terphenyl	X	hydrocarbons from the sample at the same retention time as the surrogate

Notes:

ANALYSYS INC.
3512 Montopolis Drive, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Pat McCasland
Address: 2100 Ave. O
Eunice NM 88231

Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 162918 **Report Date:** 12/27/04
Project ID: 2002-10270
Sample Name: SE A
Sample Matrix: soil
Date Received: 12/22/2004 **Time:** 10:20
Date Sampled: 12/15/2004 **Time:** 14:39

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA [1]

Parameter	Result	Units	RQL [5]	Blank	Date	Method [6]	Data Qual.[7]	Prec. [2]	Recov. [3]	CCV[4]	LCS[4]
TPH by GC (as diesel)	664	mg/Kg	2.5	<2.5	12/27/04	8015 mod.	S,M	0	Mt.Intf.	90.8	82.6
TPH by GC (as diesel-ext)	---	---	---	---	12/23/04	3570m	---	---	---	---	---
TPH by GC (as gasoline)	<5	mg/Kg	5	<5	12/27/04	8015 mod.	---	8.1	98.1	92.8	97.4

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program.

Respectfully Submitted,

Dale Wagner

1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B =Analyte detected in associated method blank(s). S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference.

INC.
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.	**Project ID:** 2002-10270	**Report#/Lab ID#:** 162918
Attn: Pat McCasland	**Sample Name:** SE-A	**Sample Matrix:** soil

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1-Chlorooctane	8015 mod.	89.4	30-125	---
p-Terphenyl	8015 mod.	**260**	30-160	X

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Report #/Lab ID#: 162918 **Matrix:** soil
Client: Environmental Plus, Inc. **Attn:** Pat McCasland
Project ID: 2002-10270
Sample Name: SE-A

Sample Temperature/Condition: <=6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is <= 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

Sample Bottles & Preservation:

☒ Sample received in appropriate container(s) and appear to be appropriately preserved.
☐ Sample received in appropriate container(s). State of sample preservation unknown.
☐ Sample received in inappropriate container(s) and/or with unknown state of preservation.

J flag Discussion:

A J flag data qualifier indicates (as required under TCEQ-TRRP reporting requirements) that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

Comments pertaining to Data Qualifiers and QC data:

Parameter	Qualif	Comment
TPH by GC (as diesel)	S,M	MS and/or MSD recoveries outside target recov. limits. LCS recovery in-limits; indicative of potential matrix interference as evidenced by M-flag.
p-Terphenyl	X	Surrogate recovery outside advisory/acceptance limits. Typically, for samples with TPH/1005 hits, high recoveries are due to co-elution of
p-Terphenyl	X	hydrocarbons from the sample at the same retention time as the surrogate

Notes:

AnalySys, Inc.
[redacted] Montopolis Drive, Austin, [redacted] 787[redacted]
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Pat McCasland
Address: 2100 Ave. O
Eunice NM 88231
Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 162919 **Report Date:** 12/27/04
Project ID: 2002-10270
Sample Name: SW-A
Sample Matrix: soil
Date Received: 12/22/2004 **Time:** 10:20
Date Sampled: 12/15/2004 **Time:** 14:47

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA [1]

Parameter	Result	Units	RQL [5]	Blank	Date	Method [6]	Data Qual.[7]	Prec. [2]	Recov. [3]	CCV[4]	LCS[4]
TPH by GC (as diesel)	542	mg/Kg	2.5	<2.5	12/27/04	8015 mod.	S,M	0	Mt.Intf.	90.8	82.6
TPH by GC (as diesel-ext)	---	---	---	---	12/23/04	3570m	---	---	---	---	---
TPH by GC (as gasoline)	<5	mg/Kg	5	<5	12/27/04	8015 mod.	---	8.1	98.1	92.8	97.4

Respectfully Submitted,

Dale Wagner

1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B =Analyte detected in associated method blank(s). S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference.

ANALYSYS INC.
3512 Montopolis Drive, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.	**Project ID:** 2002-10270	**Report#/Lab ID#:** 162919
Attn: Pat McCasland	**Sample Name:** SW-A	**Sample Matrix:** soil

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1-Chlorooctane	8015 mod.	91.7	30-125	---
p-Terphenyl	8015 mod.	210	30-160	X

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Report #/Lab ID#: 162919 **Matrix:** soil
Client: Environmental Plus, Inc. **Attn:** Pat McCasland
Project ID: 2002-10270
Sample Name: SW-A

Sample Temperature/Condition: <=6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is <= 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

Sample Bottles & Preservation:

☒ Sample received in appropriate container(s) and appear to be appropriately preserved.
☐ Sample received in appropriate container(s). State of sample preservation unknown.
☐ Sample received in inappropriate container(s) and/or with unknown state of preservation.

J flag Discussion:

A J flag data qualifier indicates (as required under TCEQ-TRRP reporting requirements) that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

Comments pertaining to Data Qualifiers and QC data:

Parameter	Qualif	Comment
TPH by GC (as diesel)	S,M	MS and/or MSD recoveries outside target recov. limits. LCS recovery in-limits; indicative of potential matrix interference as evidenced by M-flag.
p-Terphenyl p-Terphenyl	X X	Surrogate recovery outside advisory/acceptance limits. Typically, for samples with TPH/1005 hits, high recoveries are due to co-elution of hydrocarbons from the sample at the same retention time as the surrogate

Notes: _____

AnalySys Inc.
3512 Montopolis Drive, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Pat McCasland
Address: 2100 Ave. O
Eunice NM 88231

Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 162920 **Report Date:** 12/27/04
Project ID: 2002-10270
Sample Name: MW-A
Sample Matrix: soil
Date Received: 12/22/2004 **Time:** 10:20
Date Sampled: 12/15/2004 **Time:** 14:49

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA [1]

Parameter	Result	Units	RQL [5]	Blank	Date	Method [6]	Data Qual.[7]	Prec. [2]	Recov. [3]	CCV[4]	LCS[4]
TPH by GC (as diesel)	987	mg/Kg	2.5	<2.5	12/27/04	8015 mod.	S,M	0	Mt.Intf.	90.8	82.6
TPH by GC (as diesel-ext)	---	---	---	---	12/23/04	3570m	---	---	---	---	---
TPH by GC (as gasoline)	<5	mg/Kg	5	<5	12/27/04	8015 mod.	---	8.1	98.1	92.8	97.4

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program.

Respectfully Submitted,

Dale Wagner

1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B =Analyte detected in associated method blank(s). S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference.

INC.
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.	**Project ID:** 2002-10270	**Report#/Lab ID#:** 162920
Attn: Pat McCasland	**Sample Name:** MW-A	**Sample Matrix:** soil

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1-Chlorooctane	8015 mod.	87.8	30-125	---
p-Terphenyl	8015 mod.	288	30-160	X

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Report #/Lab ID#: 162920 **Matrix:** soil
Client: Environmental Plus, Inc. **Attn:** Pat McCasland
Project ID: 2002-10270
Sample Name: MW-A

Sample Temperature/Condition: <=6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is <= 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

Sample Bottles & Preservation:

☒ Sample received in appropriate container(s) and appear to be appropriately preserved.
☐ Sample received in appropriate container(s). State of sample preservation unknown.
☐ Sample received in inappropriate container(s) and/or with unknown state of preservation.

J flag Discussion:

A J flag data qualifier indicates (as required under TCEQ-TRRP reporting requirements) that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

Comments pertaining to Data Qualifiers and QC data:

Parameter	Qualif	Comment
TPH by GC (as diesel)	S,M	MS and/or MSD recoveries outside target recov. limits. LCS recovery in-limits; indicative of potential matrix interference as evidenced by M-flag.
p-Terphenyl	X	Surrogate recovery outside advisory/acceptance limits. Typically, for samples with TPH/1005 hits, high recoveries are due to co-elution of
p-Terphenyl	X	hydrocarbons from the sample at the same retention time as the surrogate

Notes:

'356

AnalySys Inc.

Chain of Custody Form

4221 Freidrich Lane, Suite 190, Austin, TX 78744
512-444-5896 FAX: 512-447-4766

2209 N. Padre Island Dr., Corpus Christi, TX 78408

Company Name	Environmental Plus, Inc.
EPI Project Manager	Pat McCasland
Mailing Address	P.O. BOX 1558
City, State, Zip	Eunice New Mexico 88231
EPI Phone#/Fax#	505-394-3481 / 505-394-2601
Client Company	Plains All American
Facility Name	8" Moore to Jal #1
Project Reference	2002-10270
EPI Sampler Name	Manuel Gonzales

Bill To

PLAINS ALL AMERICAN PIPELINE, L.P.
Attn: Jimmy Bryant
PO Box 1660,
Midland, TX 79701

LAB I.D.		SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE	ICE/COOL	OTHER	SAMPLING: DATE	TIME	BTEX 8021B	TPH 8015M	CHLORIDES (Cl⁻)	SULFATES ($SO_4^{=}$)	pH	TCLP	OTHER >>>	PAH				
162917	1	NE-A	C	1			X					X		15-Dec	2:37		X										
162918	2	SE-A	C	1			X					X		15-Dec	2:39		X										
162919	3	SW-A	C	1			X					X		15-Dec	2:47		X										
162920	4	MW-A	C	1			X					X		15-Dec	2:49		X										
	5																										
	6																										
	7																										
	8																										
	9																										
	10																										

Sampler Relinquished: Manuel Gonzales	Date 12-20 Time 7:00	Received By: R Boone	Fax results to Pat McCasland at 505-394-2601
Relinquished by: Roger Boone	Date 12-20 Time 12:00	Received By: (lab staff) [signature] /ASI 12/22/04 @1020	REMARKS:
Delivered by:	Sample Cool & Intact Yes No	Checked By:	

Sample Analysis Case Narrative

Client: Environmental Plus, Inc. **Project ID:** 2002-10270

Attn: Pat McCasland

for Sample #'s: 162917 **thru** 162920

Analyzed by AnalySys, Inc.

Final Review Date: 12/29/2004 **By:** _____ (D. Wagner)

Case Narrative:

The recovery of Diesel Range Organics (DRO) in the Matrix Spikes (MS&MSD) for the analytical batch that contained sample #'s 162917 thru 162920 was below normal laboratory acceptance criteria. High levels of DRO compounds found in the randomly selected spiked sample interfered with spike recoveries as evidenced by the Matrix Interference (Mt.Intf.) flags seen in the recovery column of the data package. The Laboratory Control Sample (LCS) run with this batch met recovery acceptance criteria for DRO indicating that the analytical method was operating correctly and in control. Although the spike recoveries were below normal acceptance criteria for DRO, none of the above referenced samples were the spiked sample. When viewed within the context of the passing LCS data, this deviation in spike recovery should have minimal impact on data usability.

ANALYSYS INC.
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Pat McCasland
Address: 2100 Ave. O
Eunice NM 88231

Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 162921 **Report Date:** 12/27/04
Project ID: 2002-10270
Sample Name: SE-B
Sample Matrix: soil
Date Received: 12/22/2004 **Time:** 10:20
Date Sampled: 12/15/2004 **Time:** 15:17

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA [1]

Parameter	Result	Units	RQL [5]	Blank	Date	Method [6]	Data Qual.[7]	Prec. [2]	Recov. [3]	CCV[4]	LCS[4]
TPH by GC (as diesel)	1140	mg/Kg	5	<5	12/27/04	8015 mod.	S,M	0	Mt.Intf.	90.8	82.6
TPH by GC (as diesel-ext)	---	---	---	---	12/23/04	3570m	---	---	---	---	---
TPH by GC (as gasoline)	<5	mg/Kg	5	<5	12/27/04	8015 mod.	---	8.1	98.1	92.8	97.4

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program.

Respectfully Submitted,

Dale Wagner

1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B =Analyte detected in associated method blank(s). S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference.

ANALYSYS INC.
3512 Montopolis Drive, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.	**Project ID:** 2002-10270	**Report#/Lab ID#:** 162921
Attn: Pat McCasland	**Sample Name:** SE-B	**Sample Matrix:** soil

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1-Chlorooctane	8015 mod.	79.6	30-125	---
p-Terphenyl	8015 mod.	137	30-160	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Report #/Lab ID#: 162921 **Matrix:** soil
Client: Environmental Plus, Inc. **Attn:** Pat McCasland
Project ID: 2002-10270
Sample Name: SE-B

Sample Temperature/Condition: <=6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is <= 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

Sample Bottles & Preservation:

☒ Sample received in appropriate container(s) and appear to be appropriately preserved.
☐ Sample received in appropriate container(s). State of sample preservation unknown.
☐ Sample received in inappropriate container(s) and/or with unknown state of preservation.

J flag Discussion:

A J flag data qualifier indicates (as required under TCEQ-TRRP reporting requirements) that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

Comments pertaining to Data Qualifiers and QC data:

Parameter	Qualif	Comment
TPH by GC (as diesel)	S,M	MS and/or MSD recoveries outside target recov. limits. LCS recovery in-limits; indicative of potential matrix interference as evidenced by M-flag.

Notes: _____

AnalySys Inc.
9312 Montopolis Drive, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Pat McCasland
Address: 2100 Ave. O
Eunice NM 88231

Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 162922 **Report Date:** 12/27/04
Project ID: 2002-10270
Sample Name: SW B
Sample Matrix: soil
Date Received: 12/22/2004 **Time:** 10:20
Date Sampled: 12/15/2004 **Time:** 15:27

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA [1]

Parameter	Result	Units	RQL [5]	Blank	Date	Method [6]	Data Qual.[7]	Prec. [2]	Recov. [3]	CCV[4]	LCS[4]
TPH by GC (as diesel)	1470	mg/Kg	5	<5	12/27/04	8015 mod.	S,M	0	Mt.Intf.	90.8	82.6
TPH by GC (as diesel-ext)	---	---	---	---	12/23/04	3570m	---	---	---	---	---
TPH by GC (as gasoline)	<5	mg/Kg	5	<5	12/27/04	8015 mod.	---	8.1	98.1	92.8	97.4

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program.

Respectfully Submitted,

Dale Wagner

1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B =Analyte detected in associated method blank(s). S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference.

INC.
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.	**Project ID:** 2002-10270	**Report#/Lab ID#:** 162922
Attn: Pat McCasland	**Sample Name:** SW-B	**Sample Matrix:** soil

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1-Chlorooctane	8015 mod.	85.3	30-125	---
p-Terphenyl	8015 mod.	**205**	30-160	X

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Report #/Lab ID#: 162922 **Matrix:** soil
Client: Environmental Plus, Inc. **Attn:** Pat McCasland
Project ID: 2002-10270
Sample Name: SW-B

Sample Temperature/Condition: <=6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is <= 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

Sample Bottles & Preservation:

☒ Sample received in appropriate container(s) and appear to be appropriately preserved.
☐ Sample received in appropriate container(s). State of sample preservation unknown.
☐ Sample received in inappropriate container(s) and/or with unknown state of preservation.

J flag Discussion:

A J flag data qualifier indicates (as required under TCEQ-TRRP reporting requirements) that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

Comments pertaining to Data Qualifiers and QC data:

Parameter	Qualif	Comment
TPH by GC (as diesel)	S,M	MS and/or MSD recoveries outside target recov. limits. LCS recovery in-limits; indicative of potential matrix interference as evidenced by M-flag.
p-Terphenyl	X	Surrogate recovery outside advisory/acceptance limits. Typically, for samples with TPH/1005 hits, high recoveries are due to co-elution of
p-Terphenyl	X	hydrocarbons from the sample at the same retention time as the surrogate

Notes:

ANALYSYS INC.
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Pat McCasland
Address: 2100 Ave. O
Eunice NM 88231
Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 162923 **Report Date:** 12/27/04
Project ID: 2002-10270
Sample Name: NE-B
Sample Matrix: soil
Date Received: 12/22/2004 **Time:** 10:20
Date Sampled: 12/15/2004 **Time:** 15:37

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA [1]

Parameter	Result	Units	RQL [5]	Blank	Date	Method [6]	Data Qual.[7]	Prec. [2]	Recov. [3]	CCV[4]	LCS[4]
TPH by GC (as diesel)	**1240**	mg/Kg	5	<5	12/27/04	8015 mod.	S,M	0	Mt.Intf.	90.8	82.6
TPH by GC (as diesel-ext)	---	---	---	---	12/23/04	3570m	---	---	---	---	---
TPH by GC (as gasoline)	<5	mg/Kg	5	<5	12/27/04	8015 mod.	---	8.1	98.1	92.8	97.4

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program.

Respectfully Submitted,

Dale Wagner

1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B =Analyte detected in associated method blank(s). S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference.

ANALYSYS INC.
3512 Montopolis Drive, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.	**Project ID:** 2002-10270	**Report#/Lab ID#:** 162923
Attn: Pat McCasland	**Sample Name:** NE-B	**Sample Matrix:** soil

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1-Chlorooctane	8015 mod.	80	30-125	---
p-Terphenyl	8015 mod.	143	30-160	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Report #/Lab ID#: 162923 **Matrix:** soil
Client: Environmental Plus, Inc. **Attn:** Pat McCasland
Project ID: 2002-10270
Sample Name: NE-B

Sample Temperature/Condition: <=6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is <= 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

Sample Bottles & Preservation:

☒ Sample received in appropriate container(s) and appear to be appropriately preserved.
☐ Sample received in appropriate container(s). State of sample preservation unknown.
☐ Sample received in inappropriate container(s) and/or with unknown state of preservation.

J flag Discussion:

A J flag data qualifier indicates (as required under TCEQ-TRRP reporting requirements) that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

Comments pertaining to Data Qualifiers and QC data:

Parameter	Qualif	Comment
TPH by GC (as diesel)	S,M	MS and/or MSD recoveries outside target recov. limits. LCS recovery in-limits; indicative of potential matrix interference as evidenced by M-flag.

Notes:

AnalySys Inc.

3512 Montopolis Drive, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.
Attn: Pat McCasland
Address: 2100 Ave. O
Eunice NM 88231

Phone: (505) 394-3481 **FAX:** (505) 394-2601

Report#/Lab ID#: 162924 **Report Date:** 12/27/04
Project ID: 2002-10270
Sample Name: NW-B
Sample Matrix: soil
Date Received: 12/22/2004 **Time:** 10:20
Date Sampled: 12/15/2004 **Time:** 15:47

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA [1]

Parameter	Result	Units	RQL [5]	Blank	Date	Method [6]	Data Qual.[7]	Prec. [2]	Recov. [3]	CCV[4]	LCS[4]
TPH by GC (as diesel)	1170	mg/Kg	5	<5	12/27/04	8015 mod.	S,M	0	Mt.Intf.	90.8	82.6
TPH by GC (as diesel-ext)	---	---	---	---	12/23/04	3570m	---	---	---	---	---
TPH by GC (as gasoline)	<5	mg/Kg	5	<5	12/27/04	8015 mod.	---	8.1	98.1	92.8	97.4

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program.

Respectfully Submitted,

Dale Wagner

1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B =Analyte detected in associated method blank(s). S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference.

ANALYSIS INC.
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 385-5886 • FAX (512) 385-7411

Client: Environmental Plus, Inc.	**Project ID:** 2002-10270	**Report#/Lab ID#:** 162924
Attn: Pat McCasland	**Sample Name:** NW-B	**Sample Matrix:** soil

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limits	Data Qualifiers
1-Chlorooctane	8015 mod.	85.5	30-125	---
p-Terphenyl	8015 mod.	169	30-160	X

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Exceptions Report:

Report #/Lab ID#: 162924 **Matrix:** soil
Client: Environmental Plus, Inc. **Attn:** Pat McCasland
Project ID: 2002-10270
Sample Name: NW-B

Sample Temperature/Condition: <=6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is <= 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

Sample Bottles & Preservation:

☒ Sample received in appropriate container(s) and appear to be appropriately preserved.
☐ Sample received in appropriate container(s). State of sample preservation unknown.
☐ Sample received in inappropriate container(s) and/or with unknown state of preservation.

J flag Discussion:

A J flag data qualifier indicates (as required under TCEQ-TRRP reporting requirements) that the raw calculated analytc concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

Comments pertaining to Data Qualifiers and QC data:

Parameter	Qualif	Comment
TPH by GC (as diesel)	S,M	MS and/or MSD recoveries outside target recov. limits. LCS recovery in-limits; indicative of potential matrix interference as evidenced by M-flag.
p-Terphenyl	X	Surrogate recovery outside advisory/acceptance limits. Typically, for samples with TPH/1005 hits, high recoveries are due to co-elution of
p-Terphenyl	X	hydrocarbons from the sample at the same retention time as the surrogate

Notes:

AnalySys Inc.

4221 Freidrich Lane, Suite 190, Austin, TX 78744
512-444-5896 FAX: 512-447-4766
2209 N. Padre Island Dr., Corpus Christi, TX 78408

Chain of Custody Form

Company Name	Environmental Plus, Inc.
EPI Project Manager	Pat McCasland
Mailing Address	P.O. BOX 1558
City, State, Zip	Eunice New Mexico 88231
EPI Phone#/Fax#	505-394-3481 / 505-394-2601
Client Company	Plains All American
Facility Name	8" Moore to Jal #1
Project Reference	2002-10270
EPI Sampler Name	Manuel Gonzales

Bill To

PLAINS ALL AMERICAN PIPELINE, L.P.
Attn: Jimmy Bryant
PO Box 1660,
Midland, TX 79701

LAB I.D.		SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE	ICE/COOL	OTHER	SAMPLING: DATE	TIME	ANALYSIS REQUEST: BTEX 8021B	TPH 8015M	CHLORIDES (Cl^-)	SULFATES ($SO_4^=$)	pH	TCLP	OTHER >>>	PAH
162921	1	SE-B	C	1			X					X		15-Dec	3:17		X						
162922	2	SW-B	C	1			X					X		15-Dec	3:27		X						
162923	3	NE-B	C	1			X					X		15-Dec	3:37		X						
162924	4	NW-B	C	1			X					X		15-Dec	3:47		X						
	5																						
	6																						
	7																						
	8																						
	9																						
	10																						

Sampler Relinquished: Manuel Gonzales — Date 12-20 Time 7:00 — Received By: Roger Boone

Relinquished by: Roger Boone — Date 12-20 Time 1200 — Received By (lab staff): [signature] /ASI 12/22/04 @ 1020

Delivered by: — Sample Cool & Intact Yes No — Checked By:

Fax results to Pat McCasland at 505-394-2601
REMARKS:

1357

Sample Analysis Case Narrative

Client: Environmental Plus, Inc. **Project ID:** 2002-10270

Attn: Pat McCasland

for Sample #'s: 162921 **thru** 162924

Analyzed by AnalySys, Inc.

Final Review Date: 12/29/2004 **By:** _____ (D. Wagner)

Case Narrative:

The recovery of Diesel Range Organics (DRO) in the Matrix Spikes (MS&MSD) for the analytical batch that contained sample #'s 162921 thru 162924 was below normal laboratory acceptance criteria. High levels of DRO compounds found in the randomly selected spiked sample interfered with spike recoveries as evidenced by the Matrix Interference (Mt.Intf.) flags seen in the recovery column of the data package. The Laboratory Control Sample (LCS) run with this batch met recovery acceptance criteria for DRO indicating that the analytical method was operating correctly and in control. Although the spike recoveries were below normal acceptance criteria for DRO, none of the above referenced samples were the spiked sample. When viewed within the context of the passing LCS data, this deviation in spike recovery should have minimal impact on data usability.

APPENDIX B

SOIL BORING LOGS

AND

WELL CONSTRUCTION DIAGRAMS

Log Of Test Borings

ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline – 2002-10270

Project Name: 8-Inch Moore to Jal #1

Location: UL-F of Section 16, Township 17 South, Range 37 East

Boring Number: MW-1 | Surface Elevation: 3,762.04'

Start Date: 07/26/04 Time: 1015

Completion Date: 07/26/04 Time: 1555

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
						5	CALICHE, White to Tan, Soft to Indurated
1032	SS	24	Moist	2,982	–	10	
						15	
1033	Cuttings	NA	Damp	2,565	–		
						20	
1040	SS	22	Damp	1,574	–		
						25	
1041	Cuttings	NA	Damp	1,558	SP		Tan to Red Brown, Soft, Fine to Medium-Grained SAND with some trace SILT, CLAY and PEBBLES
						30	
1051	SS	24	Damp	1,160	SP		some CALICHE FRAGMENTS present
						35	

Log Of Test Borings

ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline – 2002-10270

Project Name: 8-Inch Moore to Jal #1

Location: UL-F of Section 16, Township 17 South, Range 37 East

Boring Number: MW-1 | Surface Elevation: 3,762.04'

Start Date: 07/26/04 Time: 1015

Completion Date: 07/26/04 Time: 1555

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
1053	Cuttings	NA	Damp	1,049	SP		
						40	
1105	SS	24	Damp	927	SP		some SANDSTONE FRAGMENTS present
						45	
1106	Cuttings	NA	Damp	1,125	SP		
						50	
1120	SS	24	Damp	1,227	SP		some SANDSTONE FRAGMENTS Present
						55	
1122	Cuttings	NA	Damp	2,124	SP		some PEBBLES present
						60	
1135	SS	24	Wet	710	SP		Oil present on sample
						65 ▼	
1145	Cuttings	NA	Wet	906	SP		Oil present on sample
						70	

Log Of Test Borings

ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline – 2002-10270

Project Name: 8-Inch Moore to Jal #1

Location: UL-F of Section 16, Township 17 South, Range 37 East

Boring Number: MW-1 | Surface Elevation: 3,762.04

Start Date: 07/26/04 Time: 1015

Completion Date: 07/26/04 Time: 1555

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
1207	SS	24	Wet	1,543	SP		Oil present on sample
						75	
						80	
						85	
							End of Boring at 85'
						90	
						95	
						100	

Water Level Measurements (feet)

Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level
07/26/04	–	–	–	–	–
11/04/04	–	–	–	–	58.46

Drilling Method: Air Rotary 8.5" OD

Backfill Method: MW-1 Installed

Field Representative: JR

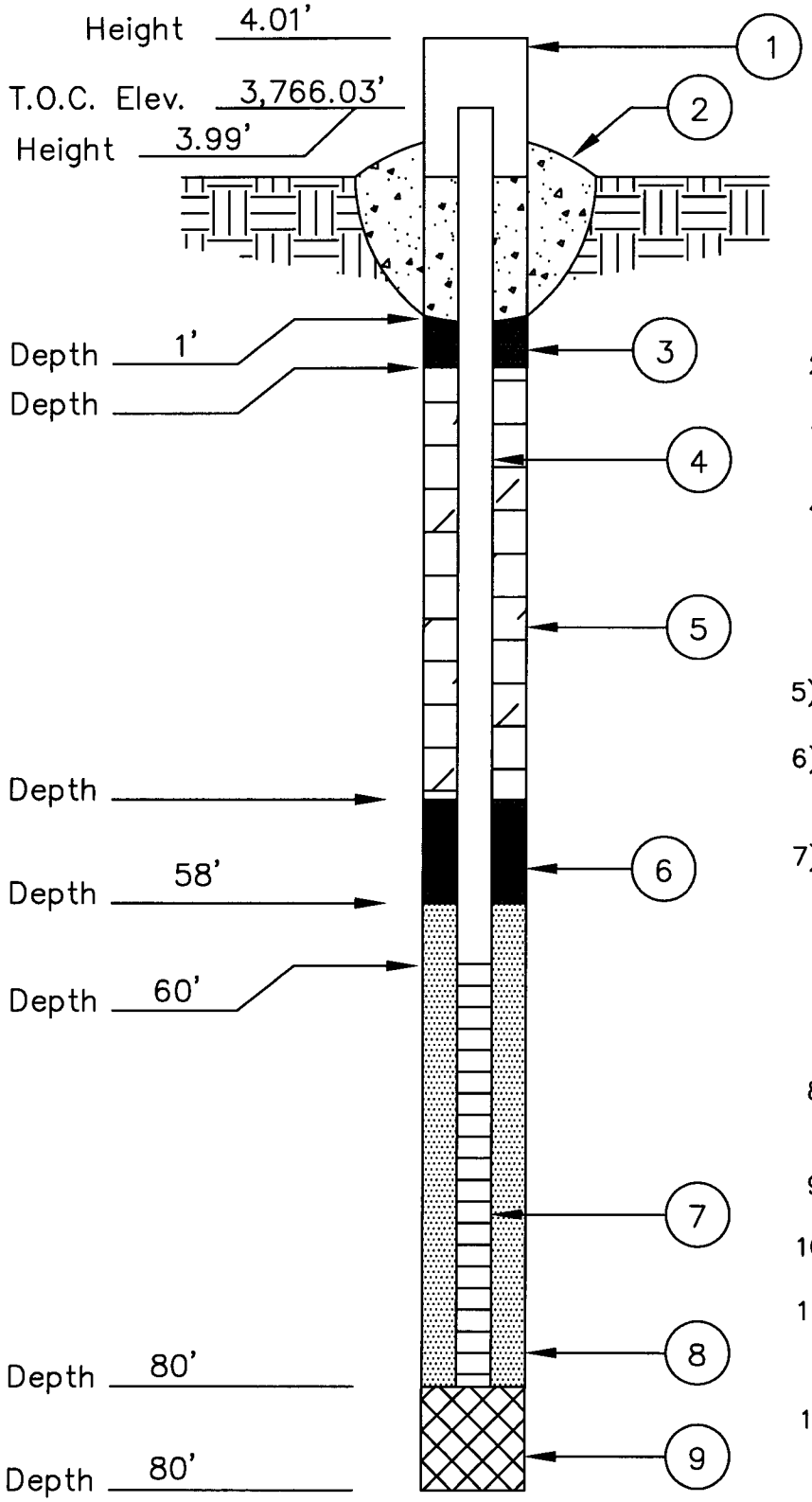
ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Monitoring Well Construction Information

Standard Well

Job No.: 2002-10270 Job Name: 8-Inch Moore to Jal #1 Boring / Well No. MW-1

Date: 07/26/04 Field Representative: JR State Unique Well No. NA



1) Protective Casing [Yes] No
Locking [Yes] No
Protective Posts Yes [No]
Concrete Pyramid Yes [No]

2) Concrete Seal [Yes] No

3) Type of Surface Seal if Installed 19 bags of Bentonite Plug

4) Solid Pipe Type PVC

Solid Pipe Length 65 ft.

Joint Type Slip/Glued or Threaded Threaded

5) Type of Backfill Bentonite Plug

6) Type of Lower Seal if Installed Bentonite Plug

7) Screen Type P.V.C.
Screen Length 20 ft.

Slot Size .010"
Length 20 ft.

Screen Diameter 4 in.

8) Type of Backfill around Screen 9 bags of 12/20 sand

9) Type of Backfill Native Soils

10) Drilling Method Air Rotary

11) Additives Used if any None

12) Borehole Diameter 8.5" in.

Log Of Test Borings

(NOTE – Page 1 of 3)

ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline – 2002-10270

Project Name: 8-Inch Moore to Jal #1

Location: UL-F of Section 16, Township 17 South, Range 37 East

Boring Number: MW-1A | Surface Elevation: 3,761.80'

Start Date: 09/29/04 Time:

Completion Date: 09/29/04 Time:

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
						5	A SOIL BORING LOG WAS NOT COMPLETED AS THIS WELL WAS INSTALLED ADJACENT TO MW-1
						10	
						15	
						20	
						25	
						30	
						35	

Log Of Test Borings

(NOTE – Page 2 of 3)

ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline – 2002-10270

Project Name: 8-Inch Moore to Jal #1

Location: UL-F of Section 16, Township 17 South, Range 37 East

Boring Number: MW-1A | Surface Elevation: 3,761.80'

Start Date: 09/29/04 Time:

Completion Date: 09/29/04 Time:

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
						40	A SOIL BORING LOG WAS NOT COMPLETED AS THIS WELL WAS INSTALLED ADJACENT TO MW-1
						45	
						50	
						55	
						60	
						65	
						70	

Log Of Test Borings

(NOTE – Page 3 of 3)

ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline – 2002-10270

Project Name: 8-Inch Moore to Jal #1

Location: UL-F of Section 16, Township 17 South, Range 37 East

Boring Number: MW-1A | Surface Elevation: 3,761.80'

Start Date: 09/29/04 Time:

Completion Date: 09/29/04 Time:

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
						75	
							End of Boring at 75'
						80	A SOIL BORING LOG WAS NOT COMPLETED AS THIS WELL WAS INSTALLED ADJACENT TO MW-1
						85	
						90	
						95	
						100	

Water Level Measurements (feet)

Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level
10/23/04	–	–	–	–	–
11/04/04	–	–	–	–	63.71

Drilling Method: Air Rotary 8.5" OD

Backfill Method: MW-1A Installed

Field Representative: JR

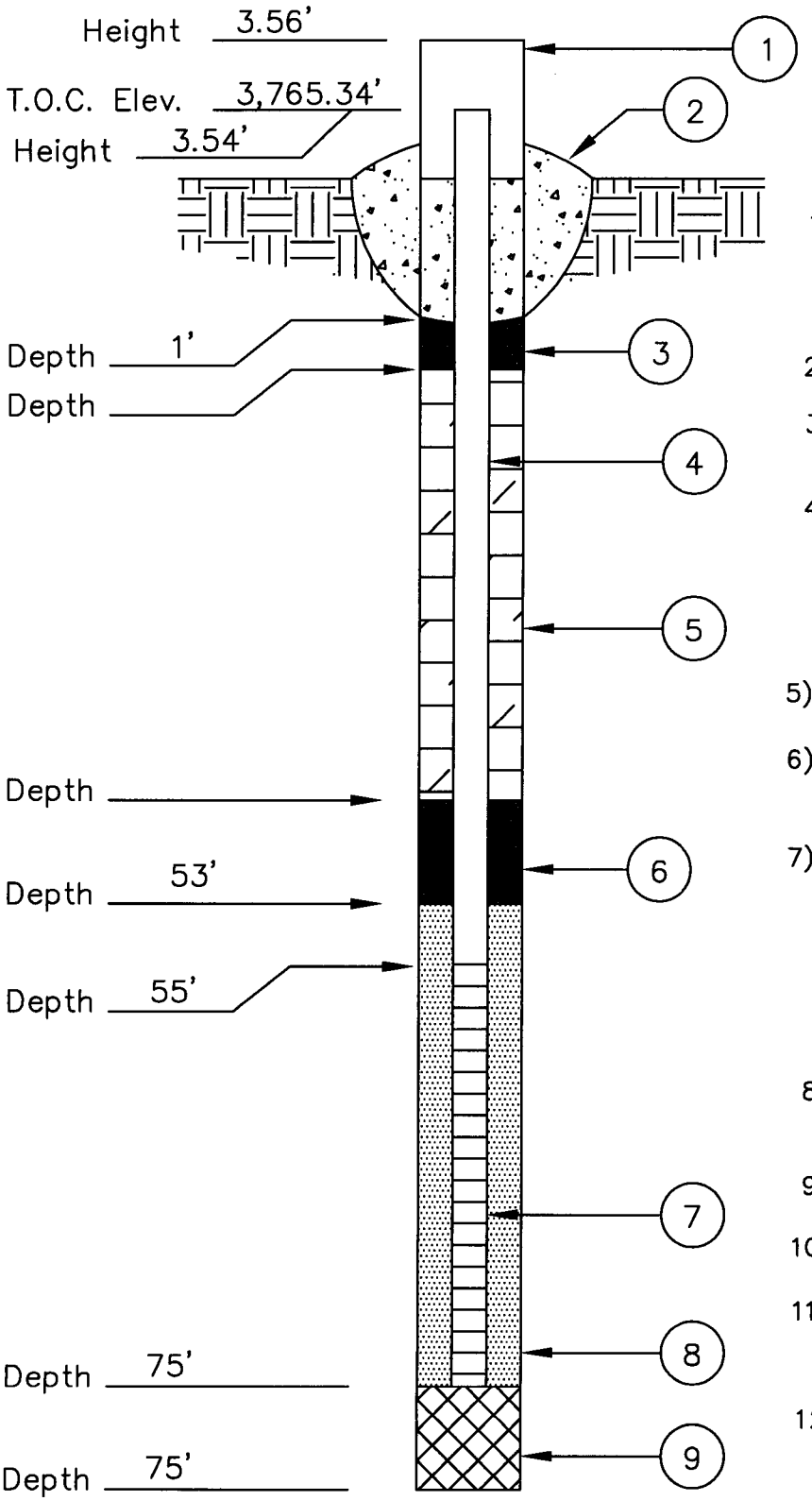
ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND
ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Monitoring Well Construction Information

Standard Well

Job No.: 2002-10270 Job Name: 8-Inch Moore to Jal #1 Boring / Well No. MW-1A

Date: 09/29/04 Field Representative: JR State Unique Well No. NA



1) Protective Casing [Yes] No
Locking [Yes] No
Protective Posts Yes [No]
Concrete Pyramid Yes [No]

2) Concrete Seal [Yes] No

3) Type of Surface Seal if Installed Bentonite Plug

4) Solid Pipe Type PVC

Solid Pipe Length 58 ft.

Joint Type Slip/Glued or Threaded Threaded

5) Type of Backfill Bentonite Plug

6) Type of Lower Seal if Installed Bentonite Plug

7) Screen Type P.V.C.
Screen Length 20 ft.

Slot Size .020"
Length 20 ft.

Screen Diameter 4 in.

8) Type of Backfill around Screen 14 bags of 12/20 sand

9) Type of Backfill Native Soils

10) Drilling Method 6.25" I.D. H.S.A.

11) Additives Used if any Water

12) Borehole Diameter 10.25" O.D. in.

Log Of Test Borings

ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline – 2002-10270

Project Name: 8-Inch Moore to Jal #1

Location: UL-F of Section 16, Township 17 South, Range 37 East

Boring Number: MW-2 | Surface Elevation: 3,767.90'

Start Date: 10/23/04 Time: 0745

Completion Date: 10/23/04 Time: 1830

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
							0.5' Sandy Loam Topsoil
							CALICHE, White to Tan, Soft to Indurated
						5	
						10	
						15	
						20	
						25	
0827	CS	24	Dry	62.2	SP		Intermix of CALICHE and underlying SAND
						30	
0835	CS	36	Dry	59.8	SP		Tan to Red Brown, Soft, Fine to Medium-Grained SAND with some trace SILT, CLAY and PEBBLES
						35	

Log Of Test Borings

ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline – 2002-10270

Project Name: 8-Inch Moore to Jal #1

Location: UL-F of Section 16, Township 17 South, Range 37 East

Boring Number: MW-2 | Surface Elevation: 3,767.90'

Start Date: 10/23/04 Time: 0745

Completion Date: 10/23/04 Time: 1830

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
0853	CS	53	Dry	68.4	SP	40	SAND is indurated
0902	CS	28	Damp	53.7	SP	45	
0920	CS	60	Damp	73.3	SP	50	
0927	CS	54	Damp	224	SP	55	SAND is indurated
0936	CS	50	Damp	1,838	SP	60	Bottom 6" of sample had a HYDROCARBON ODOR
0946	CS	60	Moist	875	SP	65	Strong HYDROCARBON ODOR
0958	CS	48	Wet	800	SP	70	Saturated with PSH and Water

Log Of Test Borings

ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline – 2002-10270

Project Name: 8-Inch Moore to Jal #1

Location: UL-F of Section 16, Township 17 South, Range 37 East

Boring Number: MW-2 | Surface Elevation: 3,767.90'

Start Date: 10/23/04 Time: 0745

Completion Date: 10/23/04 Time: 1830

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
						75	
						80	
						85	End of Boring at 83'
						90	
						95	
						100	

Water Level Measurements (feet)

Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level
10/23/04	1500	–	–	–	–
11/04/04	–	–	–	–	65.44

Drilling Method: Air Rotary 10.25" OD

Backfill Method: MW-2 Installed

Field Representative: JR

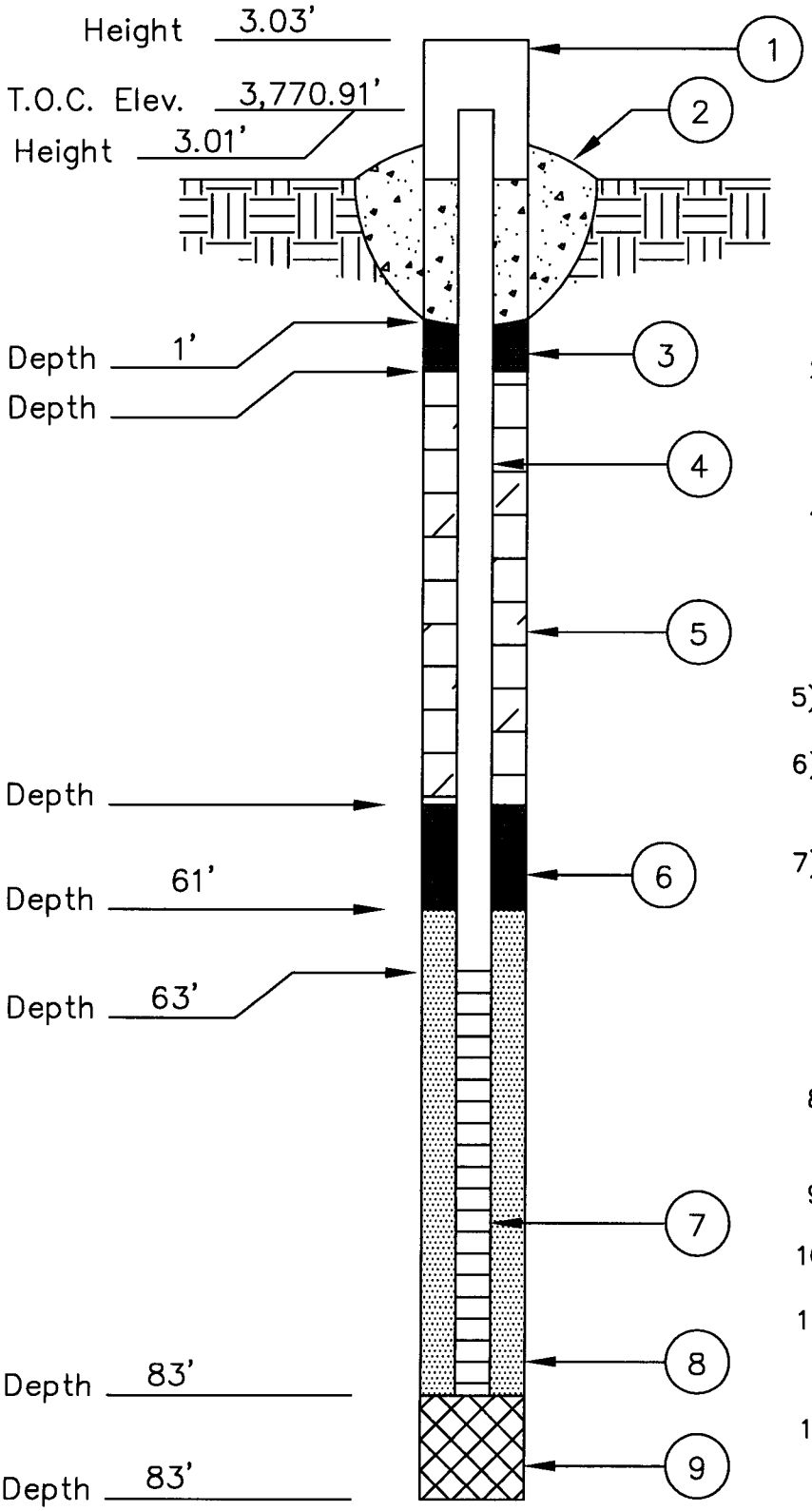
ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Monitoring Well Construction Information

Standard Well

Job No.: 2002-10270 Job Name: 8-Inch Moore to Jal #1 Boring / Well No. MW-2

Date: 10/23/04 Field Representative: JR State Unique Well No. NA



1) Protective Casing [Yes] No
Locking [Yes] No
Protective Posts Yes [No]
Concrete Pyramid Yes [No]

2) Concrete Seal [Yes] No

3) Type of Surface Seal if Installed 36 bags of Bentonite Plug

4) Solid Pipe Type PVC

Solid Pipe Length 63 ft.

Joint Type Slip/Glued or Threaded Threaded

5) Type of Backfill Bentonite Plug

6) Type of Lower Seal if Installed Bentonite Plug

7) Screen Type P.V.C.
Screen Length 20 ft.

Slot Size .020"
Length 20 ft.

Screen Diameter 4 in.

8) Type of Backfill around Screen 14 bags of 12/20 sand

9) Type of Backfill Native Soils

10) Drilling Method 6.25" I.D. H.S.A.

11) Additives Used if any Water

12) Borehole Diameter 10.25" O.D. in.

Log Of Test Borings

ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline – 2002-10270

Project Name: 8-Inch Moore to Jal #1

Location: UL-F of Section 16, Township 17 South, Range 37 East

Boring Number: MW-3 | Surface Elevation: 3,767.18'

Start Date: 10/24/04 Time: 0800

Completion Date: 10/24/04 Time: 1800

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
						0	0.5' Sandy Loam Topsoil
							CALICHE, White to Tan, Soft to Indurated
						5	
						10	
						15	
						20	
0918	CS	24	Dry	12.1	SP		Intermix of CALICHE and underlying SAND
						25	
0923	CS	36	Dry	100	SP		Tan to Red Brown, Soft, Fine to Medium-Grained SAND with some trace SILT, CLAY and PEBBLES
						30	
0928	CS	36	Dry	40.3	SP		
						35	

Log Of Test Borings

ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline – 2002-10270

Project Name: 8-Inch Moore to Jal #1

Location: UL-F of Section 16, Township 17 South, Range 37 East

Boring Number: MW-3 | Surface Elevation: 3,767.18

Start Date: 10/24/04 Time: 0800

Completion Date: 10/24/04 Time: 1800

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
0936	CS	48	Dry	75.4	SP	40	Bottom 12" is indurated, tan SAND
0949	CS	24	Dry/ Damp	144	SP	45	
0954	CS	60	Dry/ Damp	216	SP	50	
1000	CS	60	Dry/ Damp	350	SP	55	Slight HYDROCARBON ODOR
1009	CS	60	Dry/ Damp	1,653	SP	60	Slight HYDROCARBON ODOR
1019	CS	60	Wet	534	SP	65	Strong HYDROCARBON ODOR, slight hydrocarbon sheen on probe surface
1034	CS	48	Wet	740	SP	70	Saturated with PSH and Water

Log Of Test Borings

ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline – 2002-10270

Project Name: 8-Inch Moore to Jal #1

Location: UL-F of Section 16, Township 17 South, Range 37 East

Boring Number: MW-3 | Surface Elevation: 3,767.18

Start Date: 10/24/04 Time: 0800

Completion Date: 10/24/04 Time: 1800

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
						75	
						80	
						85	End of Boring at 83'
						90	
						95	
						100	

Water Level Measurements (feet)

Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level
10/24/04	1500	–	–	–	–
10/29/04	–	–	–	–	72.15

Drilling Method: Air Rotary 10.25" OD

Backfill Method: MW-3 Installed

Field Representative: JR

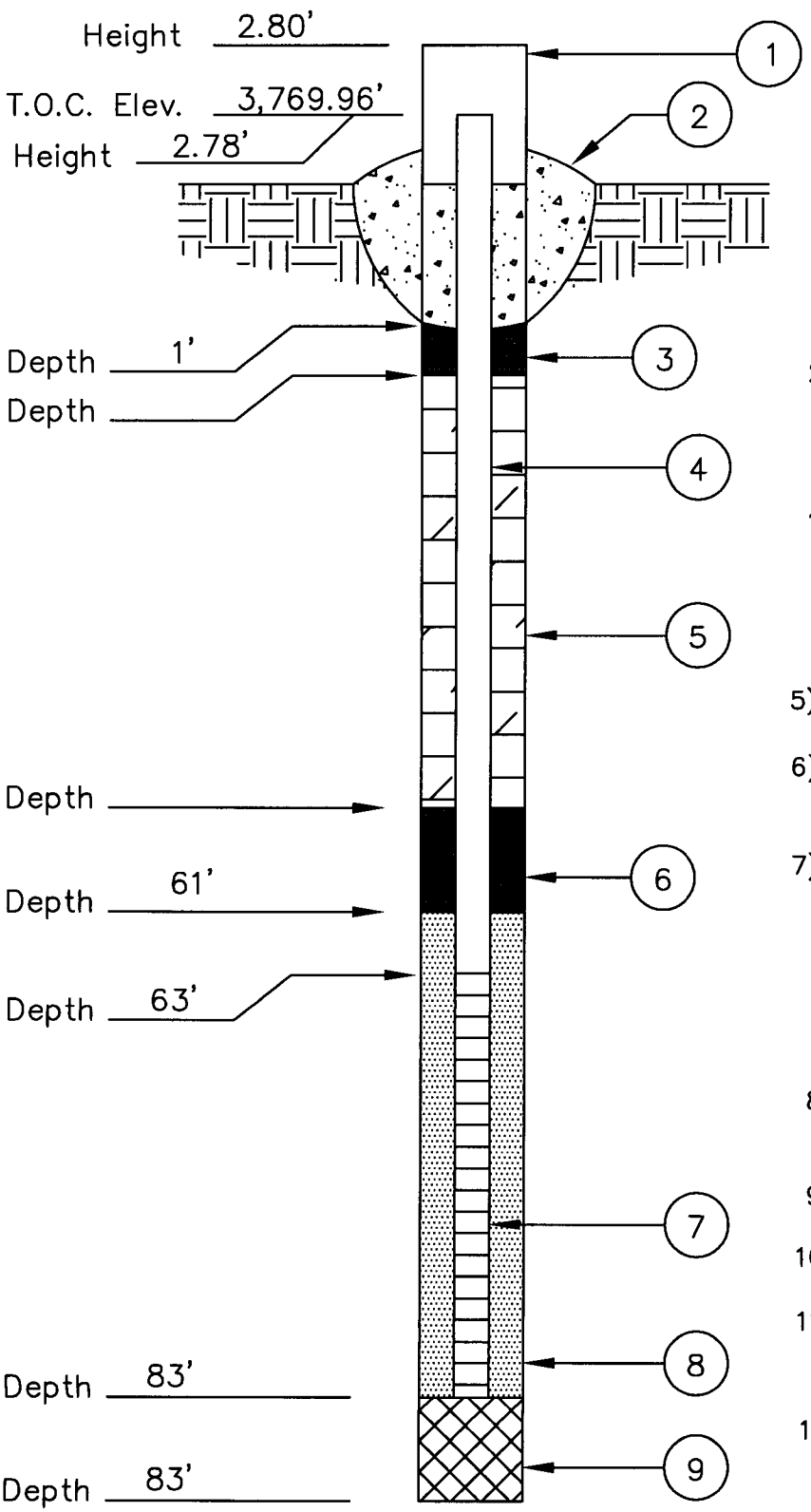
ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Monitoring Well Construction Information

Standard Well

Job No.: 2002-10270 Job Name: 8-Inch Moore to Jal #1 Boring / Well No. MW-3

Date: 10/23/04 Field Representative: JR State Unique Well No. NA



1) Protective Casing [Yes] No
Locking [Yes] No
Protective Posts Yes [No]
Concrete Pyramid Yes [No]

2) Concrete Seal [Yes] No

3) Type of Surface Seal if Installed 28 bags of Bentonite Plug

4) Solid Pipe Type PVC

Solid Pipe Length 63 ft.

Joint Type Slip/Glued or Threaded Threaded

5) Type of Backfill Bentonite Plug

6) Type of Lower Seal if Installed Bentonite Plug

7) Screen Type P.V.C.
Screen Length 20 ft.

Slot Size .020"
Length 20 ft.

Screen Diameter 4 in.

8) Type of Backfill around Screen 15.5 bags of 12/20 sand

9) Type of Backfill Native Soils

10) Drilling Method 6.25" I.D. H.S.A.

11) Additives Used if any Water

12) Borehole Diameter 10.25" O.D. in.

Log Of Test Borings

ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline – 2002-10270

Project Name: 8-Inch Moore to Jal #1

Location: UL-F of Section 16, Township 17 South, Range 37 East

Boring Number: MW-4 | Surface Elevation: 3,770.00'

Start Date: 10/22/04 Time: 0850

Completion Date: 10/22/04 Time: 1745

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
						0	0.5' Sandy Loam Topsoil
							CALICHE, White to Tan, Soft to Indurated
						5	
						10	
						15	
						20	
0923	CS	24	Dry	153	SP	25	Tan to Red Brown, Soft, Fine to Medium-Grained SAND with some trace SILT, CLAY and PEBBLES
0933	CS	24	Dry	18.3	SP	30	
0944	CS	36	Dry	155	SP	35	

Log Of Test Borings

ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline – 2002-10270

Project Name: 8-Inch Moore to Jal #1

Location: UL-F of Section 16, Township 17 South, Range 37 East

Boring Number: MW-4 | Surface Elevation: 3,770.00'

Start Date: 10/22/04 Time: 0850

Completion Date: 10/22/04 Time: 1745

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
0949	CS	36	Dry	120	SP	40	
0956	CS	60	Dry	67.3	SP	45	Middle 15" indurated
1003	CS	36	Dry	254	SP	50	
1009	CS	48	Dry	186	SP	55	Sandstone fragments present
1021	CS	53	Dry	249	SP	60	
1029	CS	60	Moist	820	SP	65	Bottom 1' has a Strong HYDROCARBON ODOR
1040	CS	50	Moist	596	SP	70	Strong HYDROCARBON ODOR

Log Of Test Borings

ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Project Number: Plains All American Pipeline – 2002-10270

Project Name: 8-Inch Moore to Jal #1

Location: UL-F of Section 16, Township 17 South, Range 37 East

Boring Number: MW-4 | Surface Elevation: 3,770.00'

Start Date: 10/22/04 Time: 0850

Completion Date: 10/22/04 Time: 1745

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
1051	CS	36	Wet	447	SP	75	Slight HYDROCARBON ODOR
						80	
						85	End of Boring at 83'
						90	
						95	
						100	

Water Level Measurements (feet)

Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level
10/22/04	1500	–	–	–	–
10/29/04	–	–	–	–	71.07

Drilling Method: Air Rotary 10.25" OD

Backfill Method: MW-4 Installed

Field Representative: JR

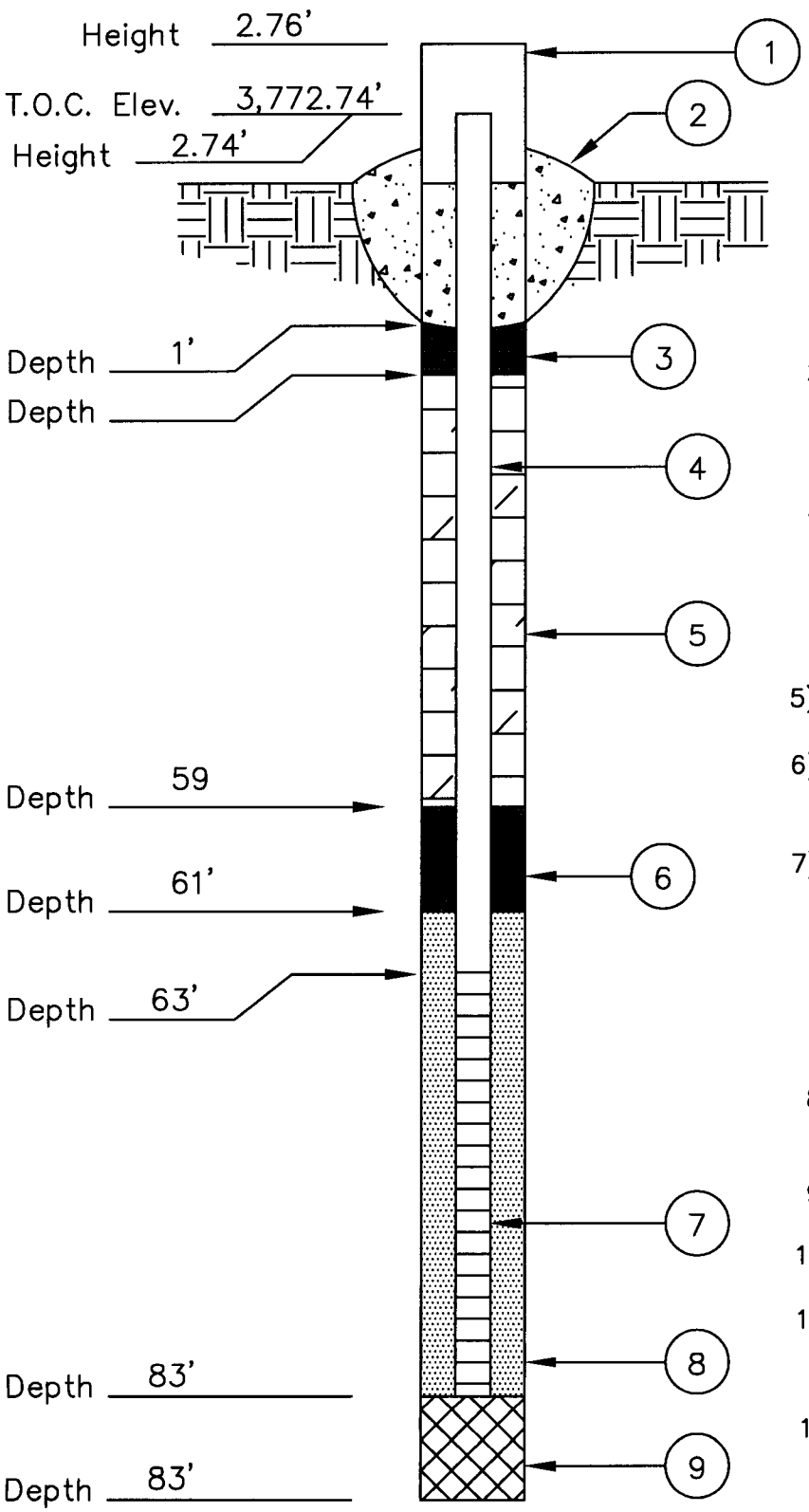
ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND
ENVIRONMENTAL SERVICES
EUNICE, NM
505-394-3481

Monitoring Well Construction Information

Standard Well

Job No.: 2002-10270 Job Name: 8-Inch Moore to Jal #1 Boring / Well No. MW-4

Date: 10/23/04 Field Representative: JR State Unique Well No. NA



1) Protective Casing [Yes] No
Locking [Yes] No
Protective Posts Yes [No]
Concrete Pyramid Yes [No]

2) Concrete Seal [Yes] No

3) Type of Surface Seal if Installed 32 bags of Bentonite Plug

4) Solid Pipe Type PVC

Solid Pipe Length 63 ft.

Joint Type Slip/Glued or Threaded Threaded

5) Type of Backfill Bentonite Plug

6) Type of Lower Seal if Installed Sluffed Off Sand

7) Screen Type P.V.C.
Screen Length 20 ft.

Slot Size .020"
Length 20 ft.

Screen Diameter 4 in.

8) Type of Backfill around Screen 21 bags of 12/20 sand

9) Type of Backfill Native Soils

10) Drilling Method 6.25" I.D. H.S.A.

11) Additives Used if any Water

12) Borehole Diameter 10.25" O.D. in.

APPENDIX C

INFORMATIONAL COPIES OF

SITE INFORMATION AND METRICS FORM

AND

INITIAL C-141

PLAINS ALL AMERICAN

EOTT Site Information and Metrics	**Incident Date:** 10-18-02 @ 10:00 AM	**NMOCD Notified:** 10-18-02 @ 11:00 AM Pat McCasland EPI left message with Paul Sheeley and sent page to the "ON-CALL" representative

SITE: 8" Moore to Jal #1	**Assigned Site Reference #:** 2002-10270
Company: EOTT	
Street Address: PO Box 1660	
Mailing Address: 5805 East Highway 80	
City, State, Zip: Midland, Texas 79702	
Representative: Frank Hernandez	
Representative Telephone: 915.638.3799	
Telephone:	
Fluid volume released (bbls): 200 bbls	**Recovered (bbls):** 0 bbls
>25 bbls: Notify NMOCD verbally within 24 hrs and submit form C-141 within 15 days. (Also applies to unauthorized releases >500 mcf Natural Gas)	
5-25 bbls: Submit form C-141 within 15 days (Also applies to unauthorized releases of 50-500 mcf Natural Gas)	
Leak, Spill, or Pit (LSP) Name: 8" Moore to Jal #1	
Source of contamination: 8" Steel Pipeline	
Land Owner, i.e., BLM, ST, Fee, Other: State of New Mexico	
LSP Dimensions: ~200' x 40'	
LSP Area: 8,000 sqft ft^2	
Location of Reference Point (RP):	
Location distance and direction from RP:	
Latitude: 32° 50' 12.36"N	
Longitude: 103° 15' 26.234"W.	
Elevation above mean sea level:	
Feet from South Section Line:	
Feet from West Section Line:	
Location- Unit or ¼¼: SE¼ of the NW¼	**Unit Letter:** F
Location- Section: 16	
Location- Township: T17S	
Location- Range: R37E	
Surface water body within 1000 ' radius of site: none	
Surface water body within 1000 ' radius of site:	
Domestic water wells within 1000' radius of site: none	
Domestic water wells within 1000' radius of site:	
Agricultural water wells within 1000' radius of site: none	
Agricultural water wells within 1000' radius of site:	
Public water supply wells within 1000' radius of site: none	
Public water supply wells within 1000' radius of site:	
Depth from land surface to ground water (DG): ~66 feet	
Depth of contamination (DC): ?	
Depth to ground water (DG – DC = DtGW): <50 feet	

1. Ground Water	**2. Wellhead Protection Area**	**3. Distance to Surface Water Body**
If Depth to GW <50 feet: *20 points*	If <1000' from water source, or;<200' from private domestic water source: *20 points*	<200 horizontal feet: *20 points*
If Depth to GW 50 to 99 feet: *10 points*		200-100 horizontal feet: *10 points*
If Depth to GW >100 feet: *0 points*	If >1000' from water source, or; >200' from private domestic water source: *0 points*	>1000 horizontal feet: *0 points*
Ground water Score = 10	***Wellhead Protection Area Score= 0***	***Surface Water Score= 0***

Site Rank (1+2+3) = 10

Total Site Ranking Score and Acceptable Concentrations

Parameter	**>19**	10-19	0-9
Benzene[1]	**10 ppm**	10 ppm	10 ppm
BTEX[1]	**50 ppm**	50 ppm	50 ppm
TPH	**100 ppm**	1,000 ppm	5,000 ppm

[1]100 ppm field VOC headspace measurement may be substituted for lab analysis

PLAINS ALL AMERICAN

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

☒ Initial Report ☐ Final Report

Name of Company: Plains All American Pipeline, L. P. (formerly Link Energy and EOTT)	**Contact:** Frank Hernandez
Address: PO Box 1660 5805 East Highway 80 Midland, Texas 79702	**Telephone No.:** 915.638.3799
Facility Name: 8" Moore to Jal #1	**Facility Type:** 8" Steel Pipeline

Surface Owner: State of New Mexico	**Mineral Owner:**	**Lease No.:**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	
16	16	T17S	R37E					**County:** Lea **Lat.** 32° 50' 12.36"N **Lon.** 103° 15' 26.234"W

NATURE OF RELEASE

Type of Release: Crude Oil	**Volume of Release:** 200 bbls barrels	**Volume Recovered:** 0 bbls barrels
Source of Release: 8" Steel Pipeline	**Date and Hour of Occurrence:** EOTT	**Date and Hour of Discovery:** 10-18-02 @ 8:00 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	**If YES, To Whom?** Paul Sheeley	
By Whom? Pat McCasland, EPI	**Date and Hour** 10-18-02 @ 11:00 AM Pat McCasland EPI left message with Paul Sheeley and sent page to the "ON-CALL" representative	
Was a Watercourse Reached? ☐ Yes ☒ No	**If YES, Volume Impacting the Watercourse:** NA	

If a Watercourse was Impacted, Describe Fully.* NA

Describe Cause of Problem and Remedial Action Taken.* 8" Steel Pipeline Site will be delineated to determine the vertical and horizontal extents of contamination. Contaminated soil will be blended on site or disposed of.

Describe Area Affected and Cleanup Action Taken.* 8,000 sqft ~200' x 40' Site will be delineated to determine the vertical and horizontal extents of contamination. Contaminated soil will be blended on site or disposed of. Remedial Goals: TPH 8015m = 1000 mg/Kg, Benzene = 10 mg/Kg, and BTEX, i.e., the mass sum of Benzene, Ethyl Benzene, Toluene, and Xylenes = 50 mg/Kg.

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: Frank Hernandez	**Approved by District Supervisor:**	
Title: District Environmental Supervisor	**Approval Date:**	**Expiration Date:**
Date: October 23, 2003 **Phone:** 915.638.3799	**Conditions of Approval:**	Attached ☐

* Attach Additional Sheets If Necessary

8" Moore to Jal #1
2002-10270