1R - 437

REPORTS

DATE:

2005

PLAINS
ALL AMERICAN
PIPELINE, L.P.

1R-437

SITE INVESTIGATION AND CLOSURE PROPOSAL

Friscoe Skelly #2
Ref. # 2004-00197

SE¼ of the NW¼ of Section 6, R37E, T17S
Latitude 32°52'4.316"N and Longitude 103°17'38.146"W
Elevation ~3,810'amsl

~7 miles southeast of Lovington, Lea County, New Mexico

April 2005

Prepared by

Environmental Plus, Inc.
2100 Avenue O
P.O. Box 1558
Eunice, New Mexico 88231
Tele 505•394•3481 FAX 505•394•2601

No Action.
Will be Revised.

STANDARD OF CARE

Site Investigation and Closure Proposal

Friscoe Skelly #2
Ref. # 2004-00197

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:

Patrick W. McCasland _____ Date

This report was reviewed by:

Iain Olness, PG _____ Date

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NMOCD - New Mexico Oil Conservation Division
Plains - Plains Pipeline, L.P.
EPI - Environmental Plus, Inc.
BLM - U.S. Department of Interior Bureau of Land Management

Table of Contents

1.0 INTRODUCTION AND SUMMARY

This site is located in UL-F (SE¼ of the NW¼) of Section 6, R37E, T17S at a latitude of 32°52'4.316"N and a longitude of 103°17'38.146"W, approximately 7 miles southeast of Lovington, New Mexico on property owned by the Robert C. Rice. Site and topographical maps are included in Attachment I. The estimated 10 barrel (bbl) crude oil leak attributed to internal/external corrosion, occurred in the Plains Pipeline, L.P. (Plains) Friscoe Skelly 4" steel pipeline with no fluids recovered. Approximately 338 square feet (ft^2) (18' x 20') of surface area was impacted. Local groundwater is estimated to occur at approximately 73-feet below ground surface ('bgs) and is based on water level measurements of monitoring wells associated with a Plains site approximately 1,300 feet due east of the site at a similar elevation. There are no surface water bodies or domestic or agricultural water wells observed to be within a 1,000 foot radius of the site. This gives the site a 10 point New Mexico Oil Conservation Division (NMOCD) ranking score for soil from the surface to 23'bgs and 20 points for soil >23'bgs. These rankings apply the following remedial guidelines for the "constituents/contaminants of concern" (CoCs):

CONSTITUENTS/CONTAMINANTS OF CONCERN	REMEDIAL GOAL
Benzene	10 mg/Kg
BTEX (mass sum of benzene, toluene, ethylbenzene, and xylenes	50 mg/Kg
Total Petroleum Hydrocarbon 8015m (TPH^{8015m}) Soil from the surface to 23'bgs	1,000 mg/Kg
TPH^{8015m} (Soil >23'bgs)	100 mg/Kg

In September 2004, Environmental Plus, Inc. (EPI) with direction from Plains, excavated 1,138 cubic yards (yd^3) of impacted soil from the release area and disposed of the soil in the NMOCD approved and permitted Plains Lea Station Landfarm GW-351. Samples collected in October 2004 from the sidewalls of the 16-feet deep excavation indicated that the horizontal extent of impact had been delineated; however, contaminant levels in the floor of the excavation at 16'bgs remained above the remedial goals. In November 2004, to delineate the vertical extent of impact, a trench was excavated beneath the leak origin and sampled. Analytical results for the samples collected from the leak origin trench indicated a decreasing TPH^{8015m} gradient; however, the analytical results for the sample collected from the floor of the trench at 24'bgs were above the remedial goals for TPH^{8015m}. Subsequently, a leak origin soil boring (BH1) was advanced in the bottom of the excavation. The analytical results established a decreasing TPH^{8015m} gradient (i.e., 2,070 mg/Kg at 21'bgs to an acceptable 46.8 mg/Kg at 36'bgs). However, the TPH^{8015m} concentration from the 41'bgs sample was 125 mg/Kg, in excess of the 100 mg/Kg remedial goal. On 12 April 2005, at the request of the NMOCD, additional samples were collected from a soil boring advanced to 46' bgs and 51' bgs adjacent to the leak origin soil boring (BH1). The TPH^{8015m} concentration from the 46'bgs sample was an acceptable 37.6 mg/Kg. The TPH^{8015m} concentration from the 51'bgs sample was reported as non-detectable at or above the method detection limits (MDL). The results establish a consistent decreasing gradient supporting the conclusion that the groundwater has not been impacted. The benzene and BTEX data also support this conclusion, i.e.,

analytical results from the 36'bgs, 41'bgs, 46'bgs, and the 51'bgs samples were reported as not being detected at or above each analytes respective MDL.

To remediate and close the site, Plains proposes to install an oversized 20 mil thick polyethylene liner at 16'bgs over the remaining hydrocarbon source term centered beneath the leak origin. This will interrupt the vertical transport mechanism effectively isolating the crude oil residual and protecting the groundwater. Prior to liner installation, the excavation bottom will be screened in the field with a photoionization detector (PID) to determine the extent of the top of the contaminated soil column. This is necessary so that the excavation perimeter can be made to accommodate the oversized liner. Because of the rock at the site and the need to protect the liner from abrasion, the excavation bottom will be contoured with a 6 to 8-inch layer of cushioning sand prior to liner installation, similarly, a 6 to 8-inch layer of cushioning sand will be placed on top of the liner prior to backfilling with clean soil. Plains will implement this proposal upon NMOCD approval and submit a report documenting successful implementation of the proposal along with the final C-141 and a request that the NMOCD require "no further action" at the site, except follow-up reseeding of the disturbed work area and resurfacing of the caliche road, consistent with the landowner.

2.0 Environmental Media Characterization

Chemical parameters of the soil and ground water were characterized consistent with the characterization and remediation/abatement goals and objectives set forth in the New Mexico Oil Conservation Division (NMOCD) approved "**General Work Plan for Remediation of E.O.T.T. Pipeline Spills, Leaks and Releases in New Mexico, July 2000"** and the NMOCD guidelines published in the following documents:

- Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993)
- Unlined Surface Impoundment Closure Guidelines (February 1993)

Acceptable thresholds for **contaminants/constituents of concern** (CoCs) (i.e., TPH, benzene, and the mass sum of benzene, toluene, ethylbenzene, and total xylene (BTEX)), will be determined based on the NMOCD Ranking Criteria as follows:

- Depth to Ground water (i.e., distance from the lower most acceptable concentration to the ground water),
- Wellhead Protection Area (i.e., distance from fresh water supply wells), and
- Distance to Surface Water Body (i.e., horizontal distance to all down gradient surface water bodies).

2.1 Geological Description

The United States Geological Survey (USGS) Ground-Water Report 6, "Geology and Ground-Water Conditions in Southern Lea County, New Mexico" (A. Nicholson and A. Clebsch, 1961), describes the near surface geology of south

central Lea County as an intergrade of the Quaternary Alluvium (QA) sediments (i.e., fine to medium sand) with the mostly eroded Cenozoic Ogallala (CO) formation. Typically, the QA and CO formations in the area are capped by a thick interbed of caliche.

2.2 Ecological Description

The area is an intergrade of the Great Plains and the Upper Chihuahuan Desert biomes consisting primarily of flat to rolling hills with Honey Mesquite (*Prosopis glandulosa*) along with typical desert grasses and weeds. Mammals represented, include Orrd's and Merriam's kangaroo rats, deer mice, White Throated Wood Rat, Cottontail Rabbit, Black Tailed Jackrabbit, and Mule Deer. Reptiles, amphibians, and birds are numerous and typical of area. A survey of Listed, Threatened, or Endangered species was not conducted.

2.3 Area Ground Water

Local ground water is estimated to occur at 73 'bgs and is based primarily on November 2004 measurements of monitoring wells at a similar surface elevation, located approximately 1,300 feet east of the site at a Plains site. New Mexico Office of the State Engineer (NMOSE) Well #4712, at an elevation 10-feet lower than the site, is located approximately 0.65 mile south with a recorded water level of 75'bgs and is consistent with the November 2004 measurements. However, water well #2474 listed in the NMOSE water well database, located approximately 0.4 mile southwest of the site at a similar surface elevation, has a groundwater level of 40'bgs that was recorded in 1954, but can not be considered to be representative of the site groundwater given the distance and direction from the site. Further, the leak origin soil boring was advanced to 51'bgs and did not encounter groundwater or moist soil typically encountered when approaching the zone of saturation. According to the USGS, the ground water elevation decreases generally to the southeast.

2.4 Area Water Wells

The area water wells recorded by the New Mexico Office of the State Engineer are annotated on the USGS topographical map included in Attachment I and the water well reports are included in Attachment IV.

2.5 Area Surface Water Bodies

There are no permanent or intermittent surface water bodies within a 1,000 feet radius of the site.

3.0 NMOCD Site Ranking

Based on the proximity of the site to protectable area water wells, surface water bodies, and depth to ground water, the site has an NMOCD ranking score of 10 for soil down to 23'bgs and 20 points for soil >23'bgs with the soil remedial goals highlighted below in the Site Ranking Matrix.

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 &20	*Wellhead Protection Area Score= 0*	*Surface Water Score= 0*
Site Rank (1+2+3) = 20 + 0 + 0 = 10 and 20 points		

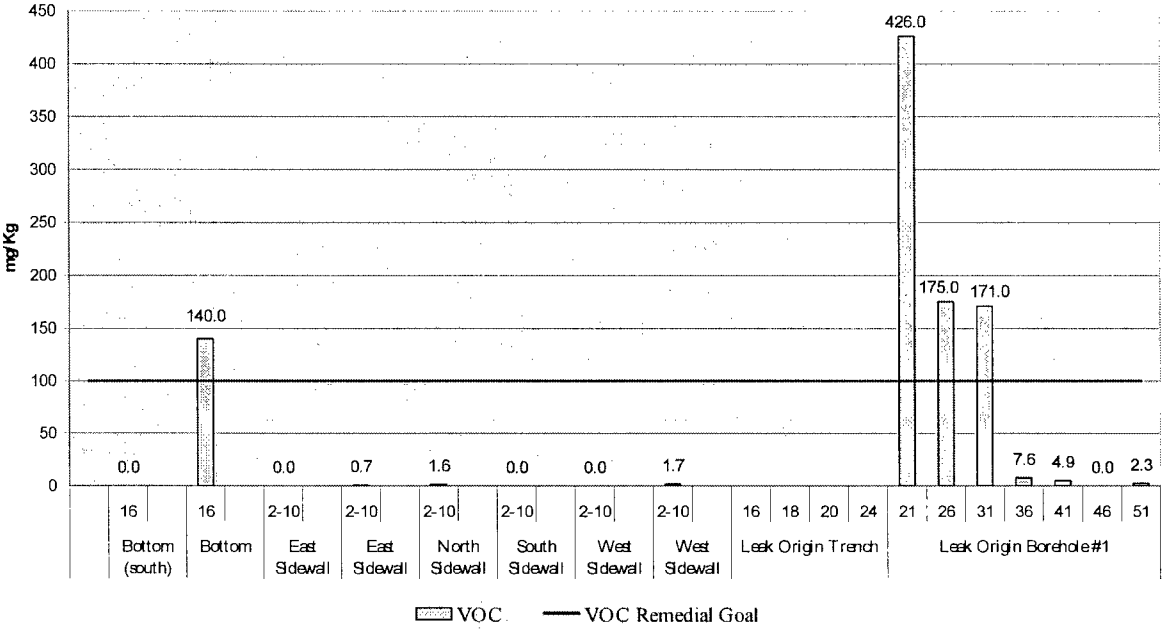
Total Site Ranking Score and Acceptable Remedial Goal Concentrations

Parameter	>19 (23 to 73'bgs)	10-19 (surface to 23'bgs)	0-9
Benzene[1]	**10 ppm**	**10 ppm**	10 ppm
BTEX[1]	**50 ppm**	**50 ppm**	50 ppm
TPH	**100 ppm**	**1000 ppm**	5000 ppm

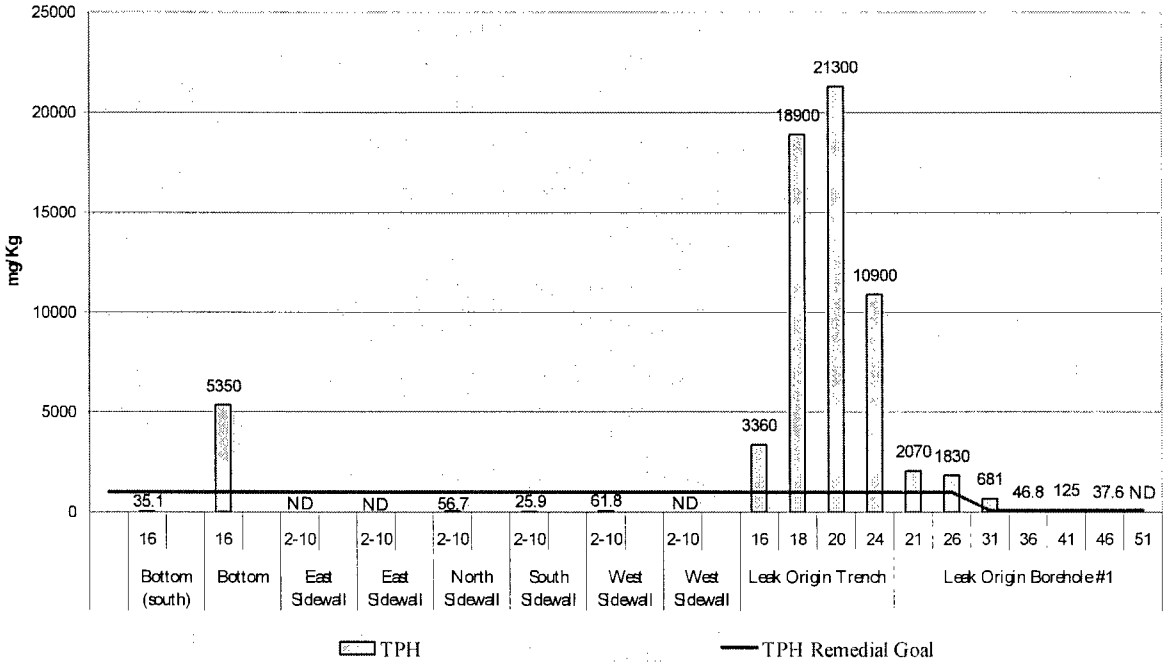
4.0 SUBSURFACE SOIL INVESTIGATION

In September 2004, Environmental Plus, Inc. (EPI) with direction from Plains, excavated 1,138 cubic yards (yd^3) of impacted soil from the release area and disposed of the soil in the NMOCD approved and permitted Plains Lea Station Landfarm GW-351. Samples collected in October 2004 from the sidewalls of the 16-feet deep excavation indicated that the horizontal extent of impact had been delineated; however, contaminant levels in the floor of the excavation at 16'bgs remained above the remedial goals. In November 2004, to delineate the vertical extent of impact, a trench was excavated beneath the leak origin and sampled. Analytical results for the samples collected from the leak origin trench indicated a decreasing TPH^{8015m} gradient; however, the analytical results for the sample collected from the floor of the trench at 24'bgs were above the remedial goals for TPH^{8015m}. Subsequently, a leak origin soil boring (BH1) was advanced in the bottom of the excavation. The analytical results established a decreasing TPH^{8015m} gradient (i.e., 2,070 mg/Kg at 21'bgs to an acceptable 46.8 mg/Kg at 36'bgs). However, the TPH^{8015m} concentration from the 41'bgs sample was 125 mg/Kg, in excess of the 100 mg/Kg remedial goal. On 12 April 2005, at the request of the NMOCD, additional samples were collected from a soil boring advanced to 46' bgs and 51' bgs adjacent to the leak origin soil boring (BH1). The TPH^{8015m} concentration from the 46'bgs sample was an acceptable 37.6 mg/Kg. The TPH^{8015m} concentration from the 51'bgs sample was reported as non-detectable at or above the method detection limits (MDL). The results establish a consistent decreasing gradient supporting the conclusion that the groundwater has not been impacted. The benzene and BTEX data also support this conclusion, i.e., analytical results from the 36'bgs, 41'bgs, 46'bgs, and the 51'bgs samples were reported as not being detected at or above each analytes respective MDL. The laboratory reports are summarized and provided in Attachment III and illustrated below.

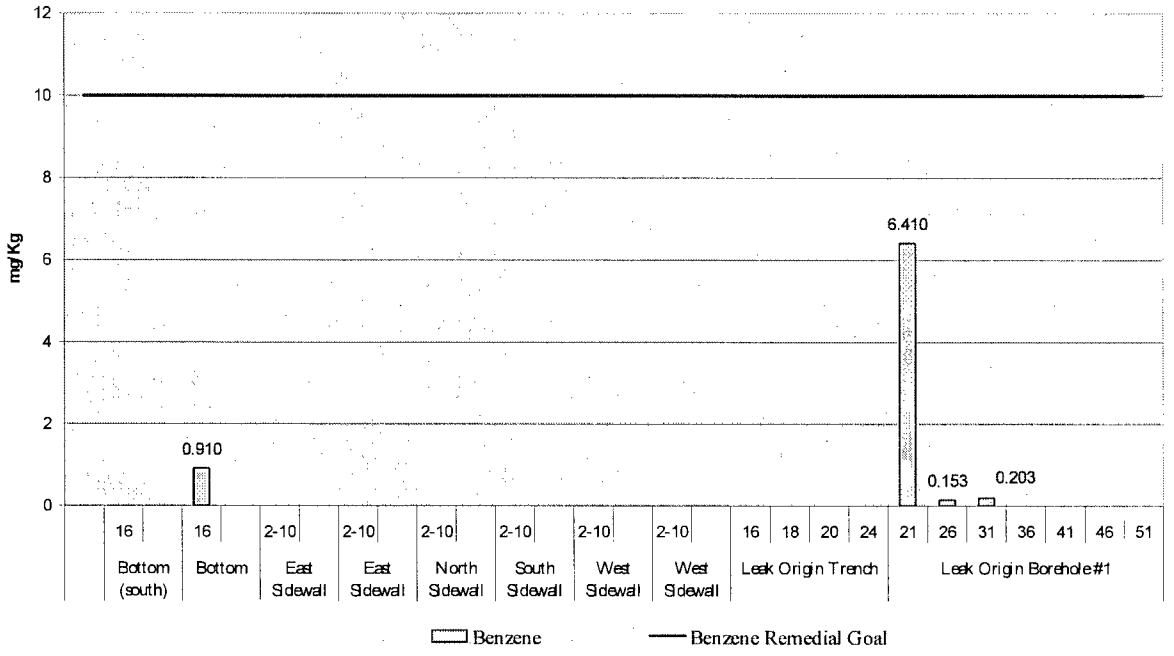
Plains All American Pipeline
Friscoe Skelly #2 #2004-00197
Volatile Organic Constituents (VOC) Delineation



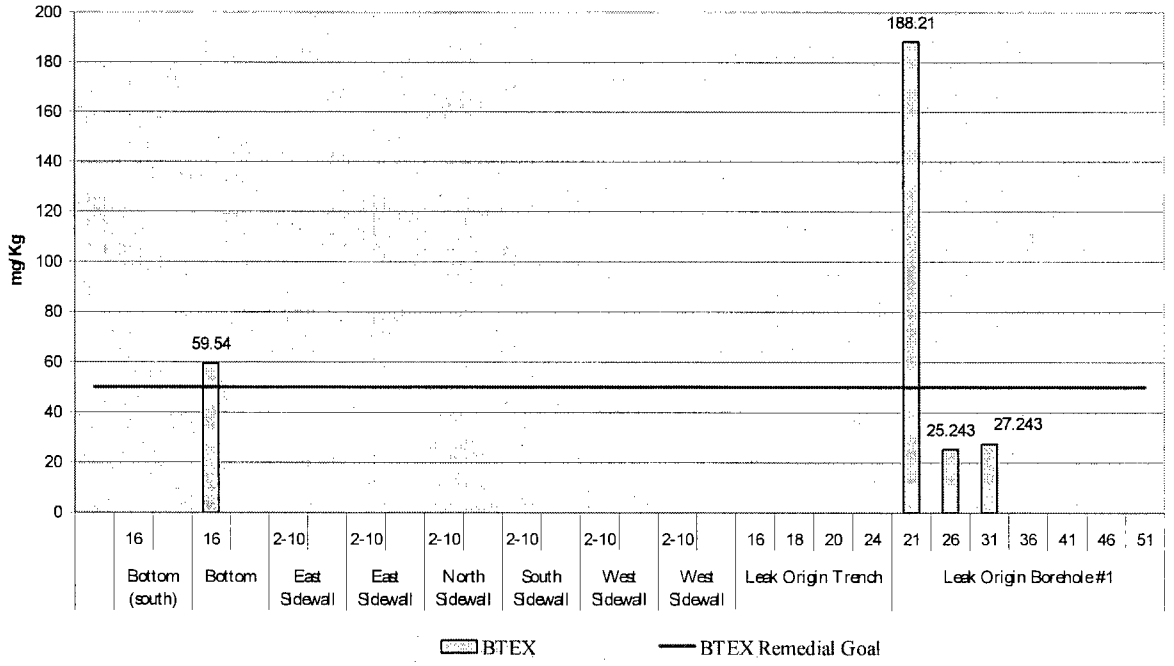
Plains All American Pipeline
Friscoe Skelly #2 #2004-00197
Total Petroleum Hydrocarbon 8015M Delineation



Plains All American Pipeline
Friscoe Skelly #2 #2004-00197
Benzene Delineation



Plains All American Pipeline
Friscoe Skelly #2 #2004-00197
BTEX Delineation



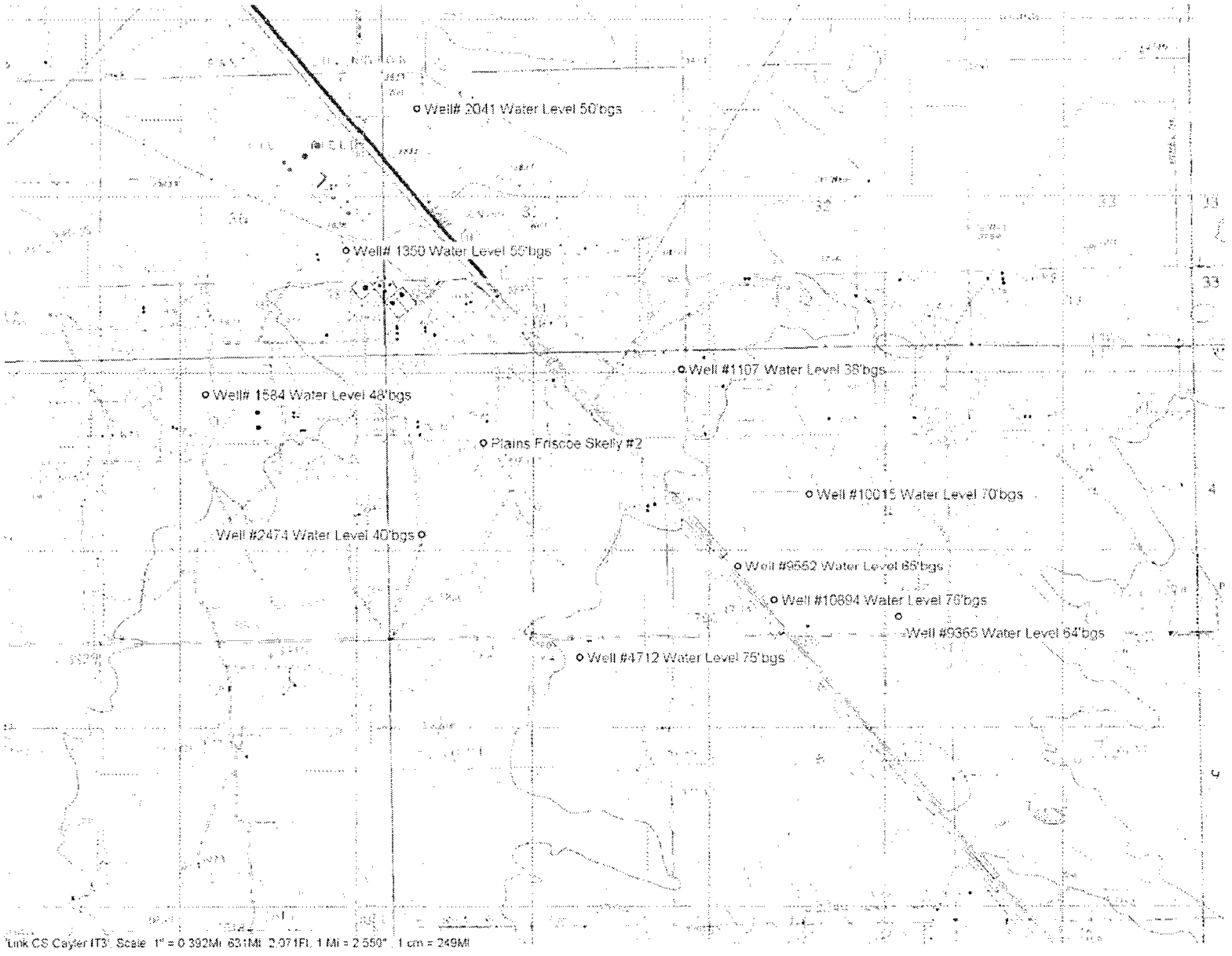
5.0 GROUND WATER INVESTIGATION

The soil investigation indicates the groundwater has not been impacted.

6.0 SOIL REMEDIATION PROPOSAL

To remediate and close the site, Plains proposes to install an oversized 20 mil thick polyethylene liner at 16'bgs over the remaining hydrocarbon source term centered beneath the leak origin. This will interrupt the vertical transport mechanism effectively isolating the crude oil residual and protecting the groundwater. Prior to liner installation the excavation bottom will be screened in the field with a PID to determine the extent of the top of the contaminated soil column. This is necessary so that the excavation perimeter can be made to accommodate the oversized liner. Because of the rock at the site and the need to protect the liner from abrasion, the excavation bottom will be contoured with a 6 to 8-inch layer of cushioning sand prior to liner installation, similarly, a 6 to 8-inch layer of cushioning sand will be placed on top of the liner prior to backfilling with clean soil. Plains will implement this proposal upon NMOCD approval and submit a report documenting successful implementation of the proposal along with the final form C-141 and a request that the NMOCD require "no further action" at the site, except follow-up reseeding of the disturbed work area and resurfacing the caliche road, consistent with the landowner. Plains will also ensure that the NMOCD is notified at least 48 hours prior to liner installation.

ATTACHMENT I SITE [illegible]


Well# 2041 Water Level 50'bgs
Well# 1350 Water Level 55'bgs
Well #1107 Water Level 38'bgs
Well# 1584 Water Level 48'bgs
Plains Friscoe Skelly #2
Well #10015 Water Level 70'bgs
Well #2474 Water Level 40'bgs
Well #9562 Water Level 85'bgs
Well #10894 Water Level 76'bgs
Well #9365 Water Level 64'bgs
Well #4712 Water Level 75'bgs
Link CS Cayler IT3 Scale 1" = 0.392Mi 631Mi 2.071Ft, 1 Mi = 2.550" 1 cm = 249Mi

PLAINS ALL AMERICAN
FRISCOE SKELLY #2
#2004-00197
UL-F SEC 6
T17S R37E
LEA CO NM
AFFECTED AREA
338 SQFT

N

SCALE 1:4,000

0 500.0

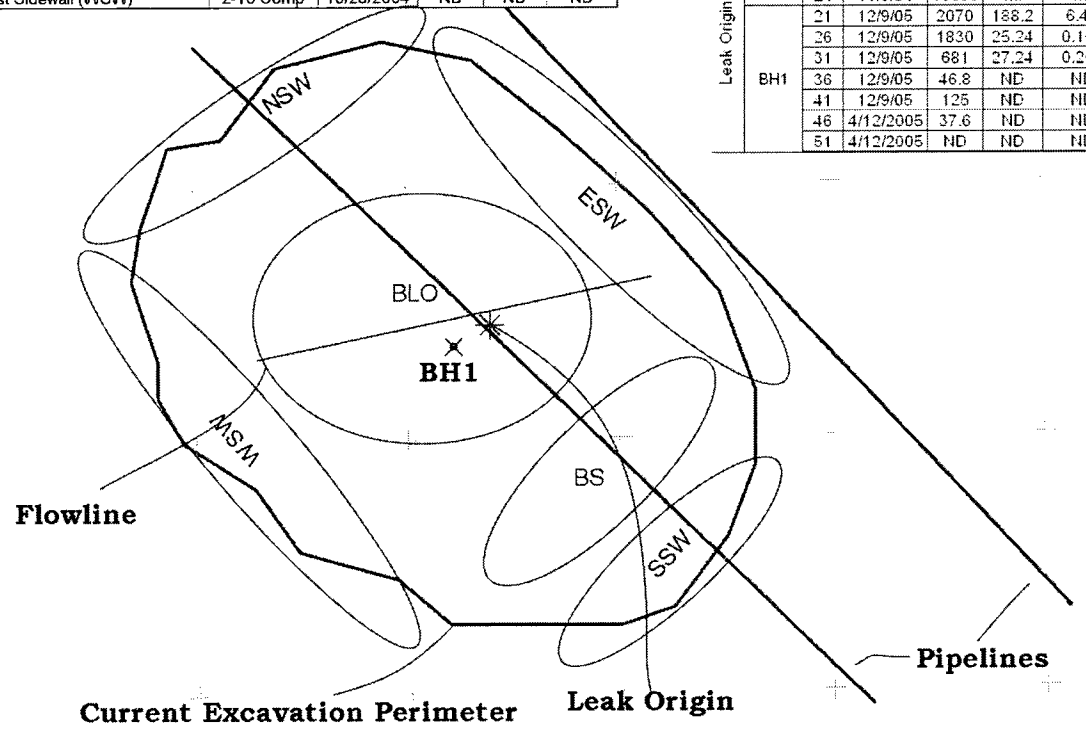
FEET

UNIVERSAL TRANSVERSE MERCATOR
13 NORTH
NAD 1983 HFGN (NEW MEXICO)

FRISCOE SKELLY NO ROAD.SSF
10/11/2004

Sample Location	Sampling Interval (FT. BGS)	Date	TPH	BTEX	Benzene
			mg/Kg	mg/Kg	mg/Kg
Bottom (south) (BS)	16	9/24/2004	35.1	ND	ND
Bottom Leak Origin (BLO)	16	10/28/2004	5350	59.54	0.91
East Sidewall (ESW)	2-10 Comp	10/28/2004	ND	ND	ND
North Sidewall (NSW	2-10 Comp	10/28/2004	56.7	ND	ND
South Sidewall (SSW)	2-10 Comp	9/24/2004	25.9	ND	ND
West Sidewall (WSW)	2-10 Comp	10/28/2004	ND	ND	ND

Sample Location		Sampling Interval	Date	TPH	BTEX	Benzene
				mg/Kg	mg/Kg	mg/Kg
Leak Origin	Trench	18	11/9/04	18900	na	na
		20	11/9/04	21300	na	na
		24	11/9/04	10900	na	na
	BH1	21	12/9/05	2070	188.2	6.41
		26	12/9/05	1830	25.24	0.153
		31	12/9/05	681	27.24	0.203
		36	12/9/05	46.8	ND	ND
		41	12/9/05	125	ND	ND
		46	4/12/2005	37.6	ND	ND
		51	4/12/2005	ND	ND	ND



BH = Borehole

Plains Friscoe Skelly #2 #2004-00197 UL-F Sec 6 T17S R37E Lea Co NM Excavation Map December 2004

N

Scale 1:150

0 15.00

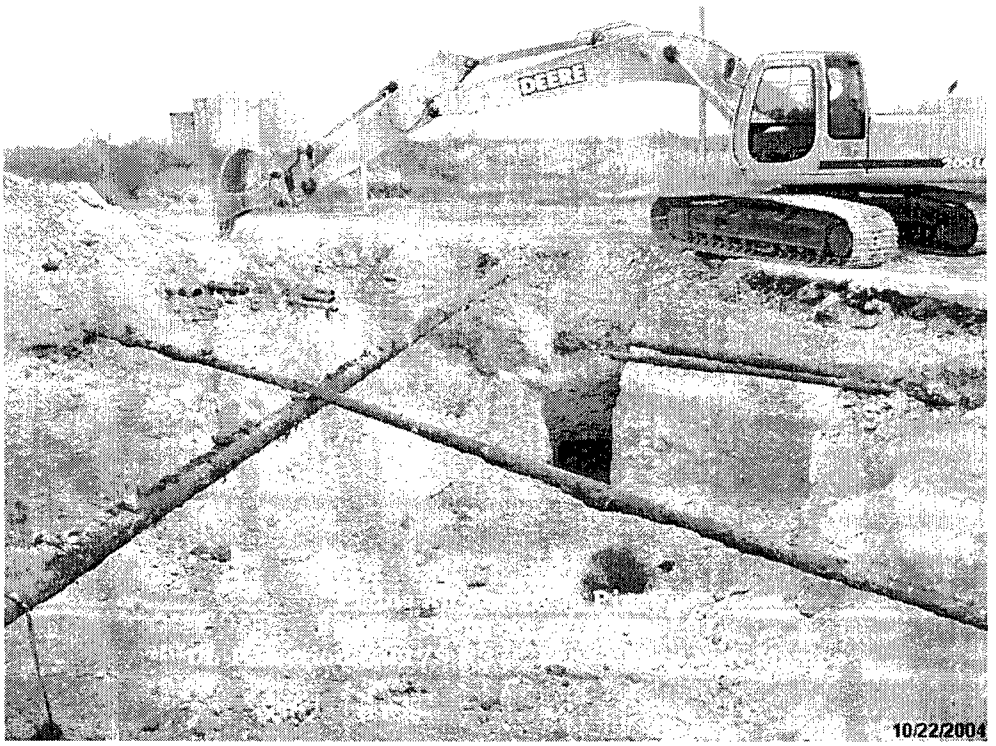
Feet

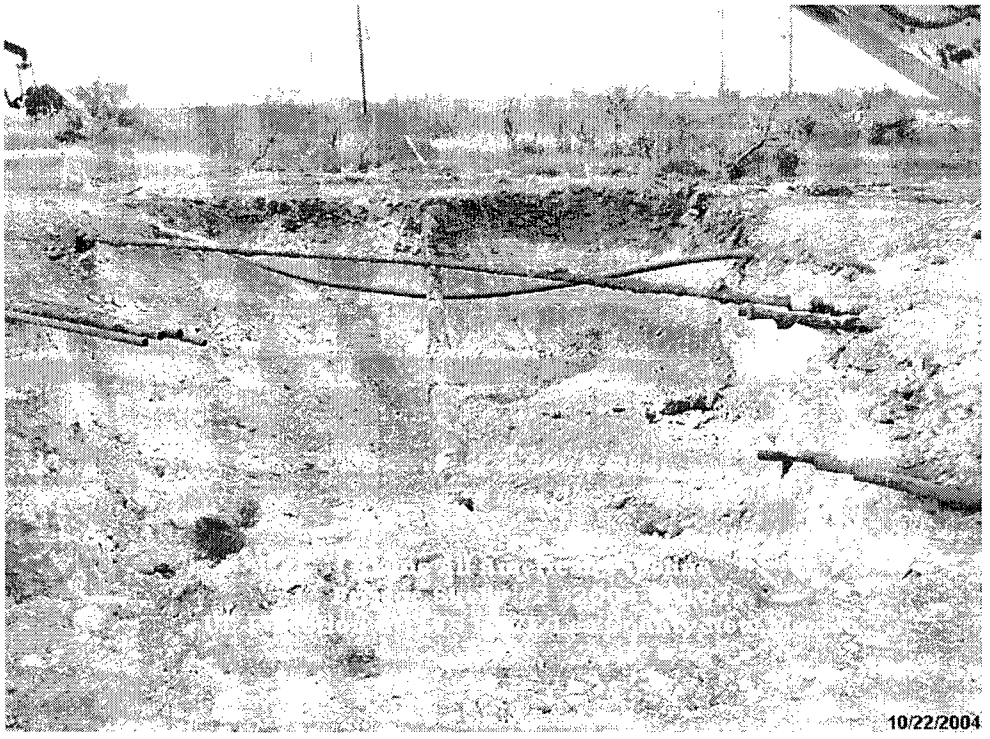
Universal Transverse Mercator
13 North
NAD 1983 HPGN (New Mexico)

Friscoe Skelly no road.ssf

3/6/2005

ATTACHMENT II PHOTOGRAPHS


DEERE
10/22/2004


10/22/2004

ATTACHMENT III ANALYTICAL REPORTS AND SUMMARY

Plains Pipeline, L.P.
Friscoe Skelly #2 #2004-00197 Soil Delineation Information

Sample Location	Vertical Sampling Interval (FT. BGS[1])	SAMPLE ID#	Date	Lithology	VOC[9]	GRO[3]	DRO[4]	TPH[5]	BTEX	Benzene	Toluene	Ethylbenzene	Xylene (m,p)	Xylene (o)
					ppm	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
South Sidewall Composite	2-10	SPFS92404SSWC4'	9/24/2004	Caliche	--	<10	25.9	25.9	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
East Sidewall Composite	2-10	SPFS92404ESWC4'	9/24/2004	Caliche	--	<10	<10	<10	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
West Sidewall Composite	2-10	SPFS92404WSWC4'	9/24/2004	Caliche	--	10.9	50.9	61.8	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
South Bottom Composite	16	SPFS92404BHC16'	9/24/2004	Caliche	--	(7.79J)	35.1	35.1	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Bottom	16	SPFS102804BH	10/28/2004	Caliche	140	1190	4,160	5,350	59.5	0.91	11.1	15.3	22.3	9.93
North Sidewall Composite	2-10	SPFS102804NSW	10/28/2004	Caliche	1.6	<10	56.7	56.7	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
East Sidewall Composite	2-10	SPFS102804ESW	10/28/2004	Caliche	0.7	<10	<10	<10	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
West Sidewall Composite	2-10	SPFS102804WSW	10/28/2004	Caliche	1.7	<10	<10	<10	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Leak Origin Trench	16	SPFS110904BH16	11/9/2004	Caliche	--	796	2,570	3,360	NA	NA	NA	NA	NA	NA
Leak Origin Trench	18	SPFS110904BH18	11/9/2004	Caliche	--	8,060	18,900	18,900	NA	NA	NA	NA	NA	NA
Leak Origin Trench	20	SPFS110904BH20	11/9/2004	Caliche	--	8,190	13,100	21,300	NA	NA	NA	NA	NA	NA
Leak Origin Trench	24	SPFS110904BH24	11/9/2004	Caliche	--	4,400	6,490	10,900	NA	NA	NA	NA	NA	NA
Leak Origin Borehole #1	21	F.S. BH#1-5'	12/9/2005	Caliche	426	1,020	1,050	2,070	188	6.41	55.5	43.6	60.0	22.7
Leak Origin Borehole #1	26	F.S. BH#1-10'	12/9/2005	Caliche	175	498	1,330	1,830	25.2	0.153	4.14	6.81	10.5	3.64
Leak Origin Borehole #1	31	F.S. BH#1-15'	12/9/2005	Sand	171	243	438	681	27.2	0.203	4.82	7.24	10.7	4.28
Leak Origin Borehole #1	36	F.S. BH#1-20'	12/9/2005	Sand	7.6	(8.36J)	46.8	46.8	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Leak Origin Borehole #1	41	F.S. BH#1-25'	12/9/2005	Sand	4.9	(5.82J)	125	125	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Leak Origin Borehole #1	46	FS041205 30'	4/12/2005	Sand	0.0	<10	37.6	37.6	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Leak Origin Borehole #1	51	FS041205 35'	4/12/2005	Sand	2.3	<10	<10	<10	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
New Mexico Oil Conservation Division Site Remedial Goals - Surface to 23'bgs					100			1,000	50	10				
New Mexico Oil Conservation Division Site Remedial Goals - >23'bgs					100			100	50	10				

[1]bgs – below ground surface

[3]GRO-Gasoline Range Organics C_6-C_{10}

[4]DRO-Diesel Range Organics C_{10}-C_{35}

[5]TPH-Total Petroleum Hydrocarbon = GRO+DRO.

[6]Bolded values are in excess of the New Mexico Oil Conservation Division guideline threshold for the parameter

[7]Soil chloride residuals must not be capable of impacting groundwater or surface water above Water Quality Control Commission (WQCC) standard of 250 mg/L.

[8]NA - not analyzed

[9]VOC - Volatile Organic Constituent/Contaminant Headspace

J - Parameter detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag)

ATTACHMENT IV AREA WATER INFORMATION

New Mexico Office of the State Engineer
Well Reports and Downloads

Township: 17S Range: 37E Sections: 5,6,7,8

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic
• All

Well / Surface Data Report | Avg Depth to Water Report
Water Column Report
Clear Form | WATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 03/09/2005

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet) Min	Max	Avg
[illegible]	17S	[illegible]	[illegible]				18	[illegible]	[illegible]	[illegible]
[illegible]	17S	[illegible]	[illegible]				2	[illegible]	[illegible]	[illegible]
L	17S	37E	07				8	[illegible]	[illegible]	[illegible]
L	17S	37E	08				1	[illegible]	[illegible]	[illegible]

Records Count: [illegible]

New Mexico Office of the State Engineer
Well Reports and Downloads

Township: 16S Range: 37E Sections: 31,32

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic
All

Well / Surface Data Report | Avg Depth to Water Report
Water Column Report
Clear Form | WATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 03/09/2005

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet) Min	Max	Avg
[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]

Record Count: [illegible]

New Mexico Office of the State Engineer
Well Reports and Downloads

Township: 16S Range: 30E Sections: 36

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic
All

Well / Surface Data Report | Avg Depth to Water Report
Water Column Report
Clear Form | WATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 03/09/2005

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet) Min	Max	Avg
[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]

Record Count: 6

New Mexico Office of the State Engineer
Well Reports and Downloads

Township: 17S Range: 36E Sections: 1,12

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic
• All

Well / Surface Data Report | Avg Depth to Water Report
Water Column Report
Clear Form | WATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 03/09/2005

								(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]

Record Count: 5

ATTACHMENT V SITE INFORMATION & METRICS FORM AND INFORMATIONAL C-141

Plains Pipeline, L.P. Site Information and Metrics	Incident Date:	NMOCD Notified:

SITE: **Friscoe Skelly #2**	Assigned Site Reference #: **2004-00197**
Company: Plains Pipeline, L.P.	**NATIONAL RESPONSE CENTER - 800.424.8802**
Street Address: PO Box 1660	Notified Date/Time:
Mailing Address: 5805 East Highway 80	Notified by:
City, State, Zip: Midland, Texas 79702	Person Notified:
Representative: Camille Reynolds	NRC Report# :
Representative Telephone: 505.393.5611	
Telephone:	
Fluid volume released (bbls): 10 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: Friscoe Skelly #2	
Source of contamination: 4" Steel Pipeline	
Land Owner, i.e., BLM, ST, Fee, Other: Robert C. Rice	
LSP Dimensions 18' x 20'	
LSP Area: 338 sqft ft^2	
Location of Reference Point (RP)	
Location distance and direction from RP	
Latitude: 32°52'4.316"N	
Longitude: 103°17'38.146"W	
Elevation above mean sea level: 3,810'amsl	
Feet from South Section Line	
Feet from West Section Line	
Location- Unit or ¼¼: SE¼ of the NW¼	Unit Letter: F
Location- Section: 6	
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	
Agricultural water wells within 1000' radius of site: none	
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) ~78 'bgs	
Depth of contamination (DC) –	
Depth to ground water (DG – DC = DtGW) - 0	

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 & 20	*Wellhead Protection Area Score= 0*	*Surface Water Score= 0*

Site Rank (1+2+3) = 10 & 20

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**	**1000 ppm**	5000 ppm

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

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 Pipeline, L.P.**	Contact: **Camille Reynolds**
Address: **PO Box 3119 (3705 E Hwy 158) Midland, Texas 79702 (79706)**	Telephone No. **505.396.3341**
Facility Name **Friscoe Skelly #2 #2004-00197**	Facility Type **4" Steel Pipeline**
Surface Owner: **Robert C. Rice**	Mineral Owner / Lease No.

LOCATION OF RELEASE

Unit Letter:	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County:
F	**6**	**T17S**	**R37E**					Lea

Latitude: 32°52'4.316"N **Longitude:** 103°17'38.146"W

NATURE OF RELEASE

Type of Release **Crude Oil**	Volume of Release **10 barrels**	Volume Recovered **0 barrels**
Source of Release **4" Steel Pipeline**	Date and Hour of Occurrence	Date and Hour of Discovery
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. **NA**	

If a Watercourse was Impacted, Describe Fully.*
NA

Describe Cause of Problem and Remedial Action Taken.* ***4" Steel Pipeline*** **The cause was either internal or external corrosion. Contaminated soil placed on a plastic barrier.**

Describe Area Affected and Cleanup Action Taken.*
338 sqft 18' x 20': Site delineated. Contaminated soil disposed of in the Lea Station Landfarm. Remedial Goals: TPH 8015m = 1000&100 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: Camille Reynolds	Approved by District Supervisor:	
E-mail Address: CJReynolds@PAALP.com	Approval Date:	Expiration Date:
Title: District Environmental Supervisor	Conditions of Approval:	Attached ☐
Date: Phone: 505.396.3341		

Attach Additional Sheets If Necessary

PLAINS
ALL AMERICAN
PIPELINE, L.P.

SITE INVESTIGATION AND CLOSURE PROPOSAL

Friscoe Skelly #2
Ref. # 2004-00197

UL-F (SE¼ of the NW¼) of Section 6, R37E, T17S
Latitude 32°52'4.316"N and Longitude 103°17'38.146"W
Elevation ~3,810'amsl

~7 miles southeast of Lovington, Lea County, New Mexico

February 2005

Prepared by

Environmental Plus, Inc.
2100 Avenue O
P.O. Box 1558
Eunice, New Mexico 88231
Tele 505•394•3481 FAX 505•394•2601

NO ACTION.
WILL BE REVISED

STANDARD OF CARE

Site Investigation and Closure Proposal

Friscoe Skelly #2
Ref. # 2004-00197

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:

Patrick W. McCasland _____ Date

This report was reviewed by:

Iain Olness, PG _____ Date

Distribution List

Name	Title	Company or Agency	Mailing Address	e-mail
Paul Sheeley	Environmental Engineer	NMOCD	1625 French Dr., Hobbs, NM 88231	PSheeley@state.nm.us
Larry Johnson	Environmental Engineer	NMOCD	1625 French Dr., Hobbs, NM 88231	LWJohnson@state.nm.us
Camille Reynolds	Environmental Supervisor	Plains	P.O. Box 3119, Midland, TX 79702	CJReynolds@paalp.com
Jeff Dann	Environmental Director	Plains	333 Clay Street Suite #1600, Houston, TX 77002	JPDann@paalp.com
Cody Miller	EPI General Manager	EPI	P.O. Box 1558, Eunice, NM 88231	Enviplus1@aol.com
Sherry Miller	EPI President	EPI	P.O. Box 1558, Eunice, NM 88231	Enviplus1@aol.com

NMOCD - New Mexico Oil Conservation Division
NMSLO - New Mexico State Land Office
Plains - Plains All American Pipeline
EPI - Environmental Plus, Inc.
BLM - U.S. Department of Interior Bureau of Land Management

Table of Contents

1.0 INTRODUCTION AND SUMMARY

This site is located in UL-F (SE¼ of the NW¼) of Section 6, R37E, T17S at a latitude of 32°52'4.316"N and a longitude of 103°17'38.146"W, approximately 7 miles southeast of Lovington, New Mexico on property owned by the Robert C. Rice. Site and topographical maps are included in Attachment I. The estimated 10 barrel (bbl) crude oil leak attributed to internal/external corrosion, occurred in the Plains All American Pipeline (Plains) Friscoe Skelly 4" steel pipeline with no bbls recovered. Approximately 338 square feet (ft^2) (18' x 20') of surface area was impacted. Local groundwater is estimated to occur at approximately 73-feet below ground surface ('bgs) and is based on water level measurements of monitoring wells associated with another Plains site approximately 1,300 feet due east of the site at a similar elevation. There are no surface water bodies or domestic or agricultural water wells observed to be within a 1,000 foot radius of the site. This gives the site a 10 point New Mexico Oil Conservation Division (NMOCD) ranking score for soil from the surface to 28'bgs and 20 points for soil >28'bgs. These rankings apply the following remedial guidelines for the "constituents/contaminants of concern" (CoCs):

CONSTITUENTS/CONTAMINANTS OF CONCERN	REMEDIAL GOAL
Benzene	10 mg/Kg
BTEX (mass sum of benzene, toluene, ethylbenzene, and xylenes	50 mg/Kg
Total Petroleum Hydrocarbon 8015m (TPH^{8015m}) Soil from the surface to 28'bgs	1000 mg/Kg
TPH^{8015m} (Soil >28'bgs)	100 mg/Kg

In September 2004, Environmental Plus, Inc. (EPI) with direction from Plains, excavated 1,138 cubic yards (yd^3) of impacted soil from the release area and disposed of the soil in the NMOCD approved and permitted Plains Lea Station Landfarm GW-351. Samples collected in October 2004 from the sidewalls of the 16-feet deep excavation indicated that the horizontal extents of impact had been delineated; however, the excavation bottom at 16'bgs remained above the remedial goals. In November 2004, to delineate the vertical extent of impact, a trench was excavated beneath the leak origin and sampled. Results from the leak origin trench indicated a decreasing TPH^{8015m} gradient; however, the sample collected from the floor of the trench at 24'bgs was above the remedial goals. Subsequently, a leak origin soil boring (BH1) was advanced in the bottom of the excavation. The analytical results established a decreasing TPH^{8015m} gradient, i.e., 2,070 mg/Kg at 21'bgs to an acceptable 46.8 mg/Kg at 36'bgs. The TPH^{8015m} concentration from the 41'bgs sample was 125 mg/Kg and is in excess of the 100 mg/Kg remedial goal. The noted increase from the 36'bgs could be due to sampling or laboratory variables, nevertheless, the results establish a consistent decreasing gradient supporting the conclusion that the groundwater had not been impacted. The benzene and BTEX data also support this conclusion, i.e., analytical results from the 36'bgs and the 41'bgs samples were reported as not being detected above the method detection limits. To remediate and close the site, Plains proposes to install an oversized 20 mil thick polyethylene liner at 16'bgs over the remaining hydrocarbon source term centered beneath the leak origin. This will interrupt the vertical transport mechanism effectively isolating

the crude oil residual and protecting the groundwater. Prior to liner installation the excavation bottom will be screened in the field with a photoionization detector (PID) to determine the exact diameter of the top of the contaminated soil column. This is necessary so that the excavation perimeter can be made to accommodate the 3-foot laterally oversized liner. Because of the rock at the site and the need to protect the liner from abrasion, the excavation bottom will be contoured with a 6 to 8-inch layer of cushioning sand prior to liner installation, similarly, a 6 to 8-inch layer of cushioning sand will be placed on top of the liner prior to backfilling with clean soil. This proposed method will effectively isolate the remaining crude oil source term, negating the vertical transport mechanism, and be protective of the local groundwater. Plains will implement this proposal upon NMOCD approval and submit a report documenting successful implementation of the proposal along with the final form C-141 and a request that the NMOCD require "no further action" be required at the site, except follow-up reseeding consistent with the landowner. Plains will also ensure that the NMOCD is notified at least 48 hours prior to sampling events and liner installation.

2.0 Environmental Media Characterization

Chemical parameters of the soil and ground water were characterized consistent with the characterization and remediation/abatement goals and objectives set forth in the New Mexico Oil Conservation Division (NMOCD) approved **"General Work Plan for Remediation of E.O.T.T. Pipeline Spills, Leaks and Releases in New Mexico, July 2000"** and the NMOCD guidelines published in the following documents:

- Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993)
- Unlined Surface Impoundment Closure Guidelines (February 1993)

Acceptable thresholds for **contaminants/constituents of concern** (CoCs), i.e., TPH, benzene, and the mass sum of benzene, toluene, ethylbenzene, and total xylene (BTEX), will be determined based on the NMOCD Ranking Criteria as follows:

- Depth to Ground water, i.e., distance from the lower most acceptable concentration to the ground water,
- Wellhead Protection Area, i.e., distance from fresh water supply wells, and
- Distance to Surface Water Body, i.e., horizontal distance to all down gradient surface water bodies.

2.1 Geological Description

The United States Geological Survey (USGS) Ground-Water Report 6, "Geology and Ground-Water Conditions in Southern Lea County, New Mexico," A. Nicholson and A. Clebsch, 1961, describes the near surface geology of south central Lea County as an intergrade of the Quaternary Alluvium (QA) sediments, i.e., fine to medium sand, with the mostly eroded Cenozoic Ogallala (CO) formation. Typically, the QA and CO formations in the area are capped by a thick interbed of caliche.

2.2 ECOLOGICAL DESCRIPTION

The area is an intergrade of the Great Plains and the Upper Chihuahuan Desert biomes consisting primarily of flat to rolling hills with Honey Mesquite (Prosopis glandulosa) along with typical desert grasses and weeds. Mammals represented, include Orrd's and Merriam's Kangaroo Rat, Deer Mouse, White Throated Wood Rat, Cottontail Rabbit, Black Tailed Jackrabbit, and the Mule Deer. Reptiles, Amphibians, and Birds are numerous and typical of area. A survey of Listed, Threatened, or Endangered species was not conducted.

2.3 AREA GROUND WATER

Local ground water is estimated to occur at 73 'bgs and is based primarily on November 2004 measurements of monitoring wells at a similar surface elevation, located approximately 1,300 feet east of the site at another Plains remediation site. New Mexico Office of the State Engineer (NMOSE) Well #4712, at an elevation 10-feet lower than the site, is located approximately 0.65 mile south with a recorded water level of 75'bgs and is consistent with the November 2004 measurements. However, water well #2474 listed in the NMOSE water well database, located approximately 0.4 mile southwest of the site at a similar surface elevation, has a groundwater level of 40'bgs that was recorded in 1954, but can not be considered to be representative of the site groundwater given the distance and direction from the site. Further, the leak origin soil boring was advanced to 41'bgs and did not encounter groundwater or moist soil typically encountered when approaching the zone of saturation. According to the USGS, the ground water elevation decreases generally to the southeast.

2.4 AREA WATER WELLS

The area water wells recorded by the New Mexico Office of the State Engineer are annotated on the USGS topographical map included in Attachment I and the water well reports are included in Attachment IV.

2.5 AREA SURFACE WATER BODIES

There are no permanent or intermittent surface water bodies within a 1,000 feet radius of the site.

3.0 NMOCD SITE RANKING

Based on the proximity of the site to protectable area water wells, surface water bodies, and depth to ground water, the site has an NMOCD ranking score of 10 for soil down to 28'bgs and 20 points for soil >28'bgs with the soil remedial goals highlighted below in the Site Ranking Matrix.

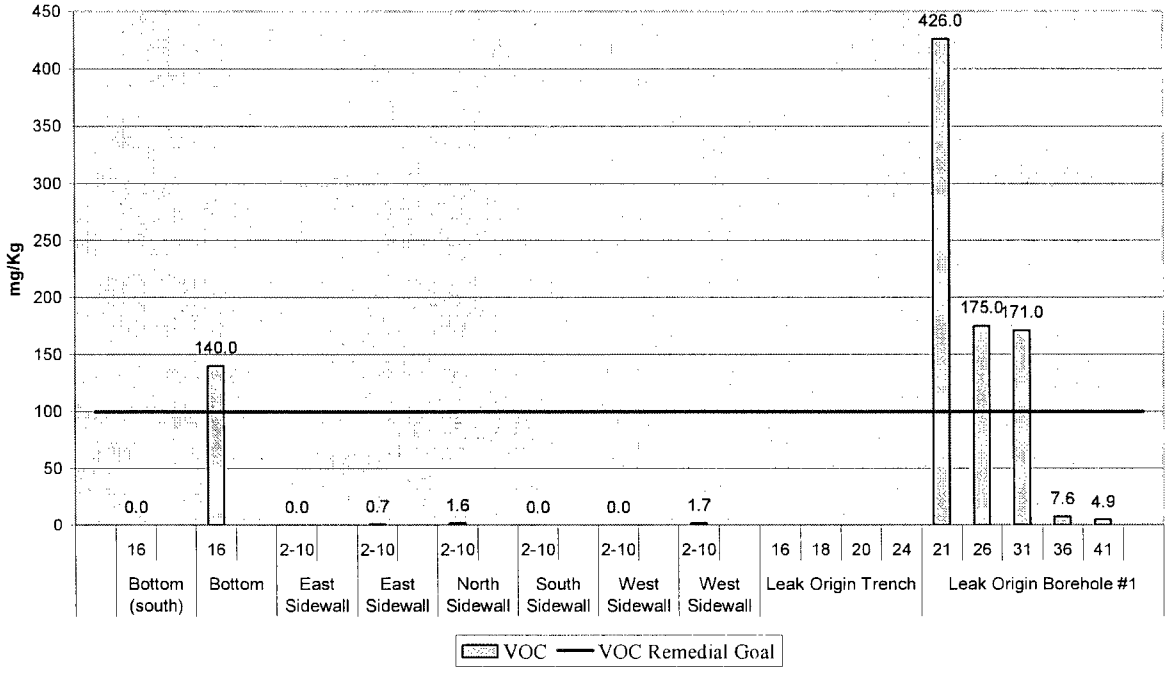
1. Ground Water	2. Wellhead Protection Area	3. Distance to Surface Water Body
If Depth to GW <50 feet: *20 points*	If <1000' from water source, or;<200' from private domestic water source: *20 points*	<200 horizontal feet: *20 points*
If Depth to GW 50 to 99 feet: *10 points*		200-100 horizontal feet: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

Total Site Ranking Score and Acceptable Remedial Goal Concentrations			
Parameter	**>19 (28 to 78'bgs)**	**10-19 (surface to 28'bgs)**	0-9
Benzene[1]	**10 ppm**	**10 ppm**	10 ppm
BTEX[1]	**50 ppm**	**50 ppm**	50 ppm
TPH	**100 ppm**	**1000 ppm**	5000 ppm

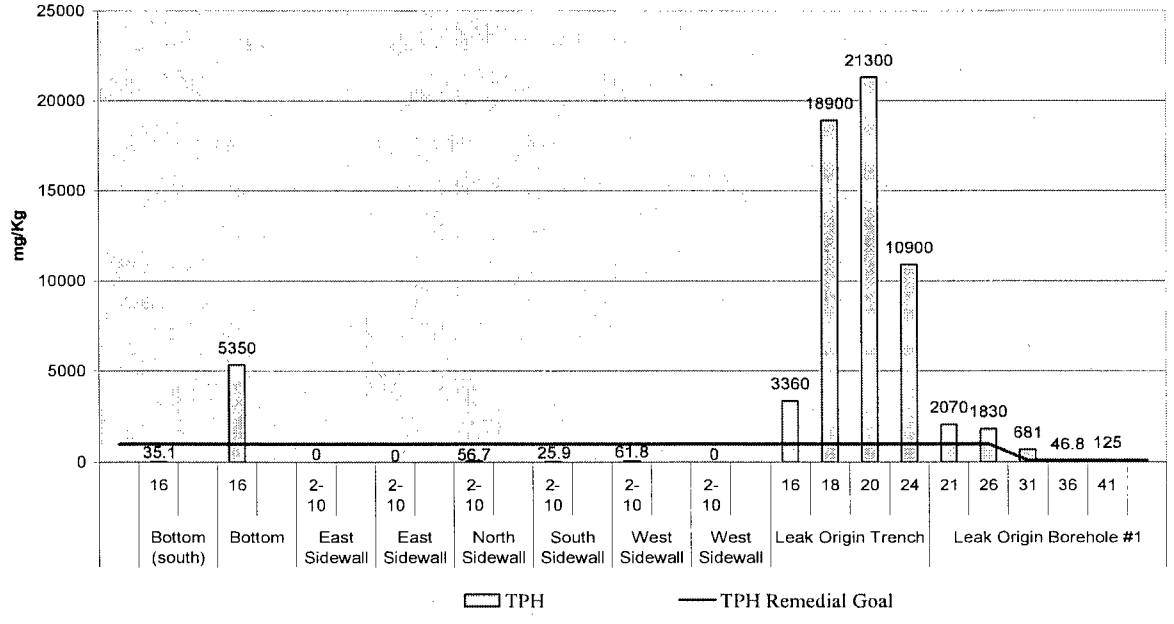
4.0 SUBSURFACE SOIL INVESTIGATION

In September 2004, Environmental Plus, Inc. (EPI) with direction from Plains, excavated 1,138 yd^3 of impacted soil from the release area and disposed of the soil in the NMOCD approved and permitted Plains Lea Station Landfarm GW-351. Samples collected in October 2004 from the sidewalls of the 16-feet deep excavation indicated that the horizontal extents of impact had been delineated; however, the excavation bottom at 16'bgs remained above the remedial goals. In November 2004, to delineate the vertical extent of impact, a trench was excavated beneath the leak origin and sampled. Results from the leak origin trench indicated a decreasing TPH^{8015m} gradient; however, the sample collected from the floor of the trench at 24'bgs was above the remedial goals. Subsequently, a leak origin soil boring (BH1) was advanced in the bottom of the excavation. The analytical results established a decreasing TPH^{8015m} gradient, i.e., 2,070 mg/Kg at 21'bgs to an acceptable 46.8 mg/Kg at 36'bgs. The TPH^{8015m} concentration from the 41'bgs sample was 125 mg/Kg and is in excess of the 100 mg/Kg remedial goal. The noted increase from the 36'bgs could be due to sampling or laboratory variables, nevertheless, the results establish a consistent decreasing gradient supporting the conclusion that the groundwater had not been impacted. The benzene and BTEX data also support this conclusion, i.e., analytical results from the 36'bgs and the 41'bgs samples were reported as non-detectable above the method detection limits. The laboratory reports are summarized and provided in Attachment III and illustrated below.

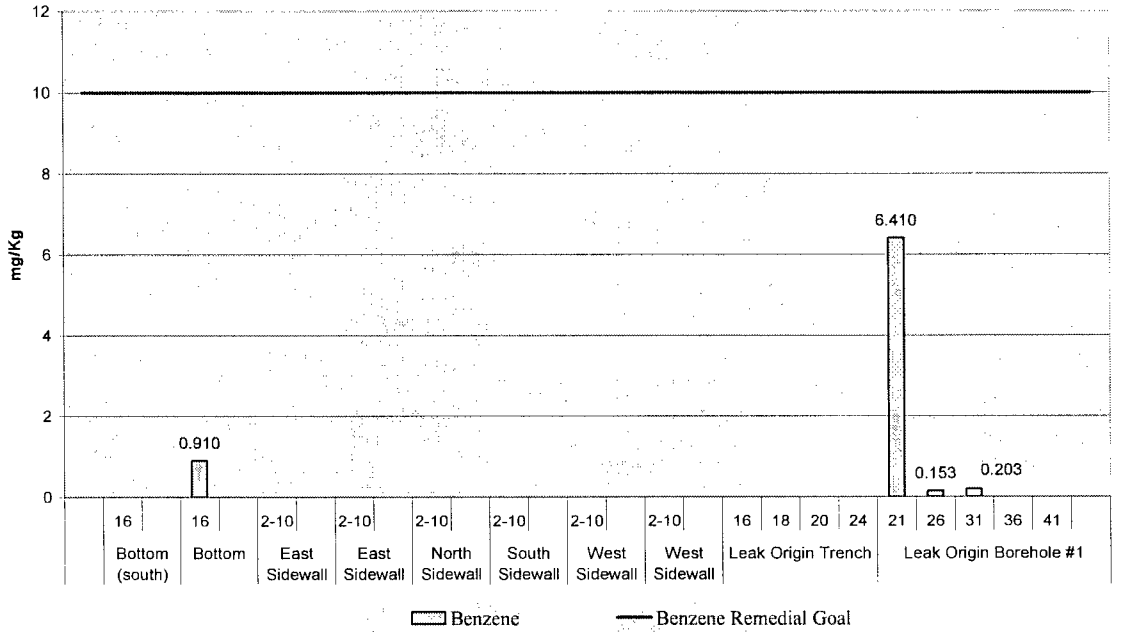
Plains All American Pipeline
Friscoe Skelly #2 #2004-00197
Volatile Organic Constituents (VOC) Delineation



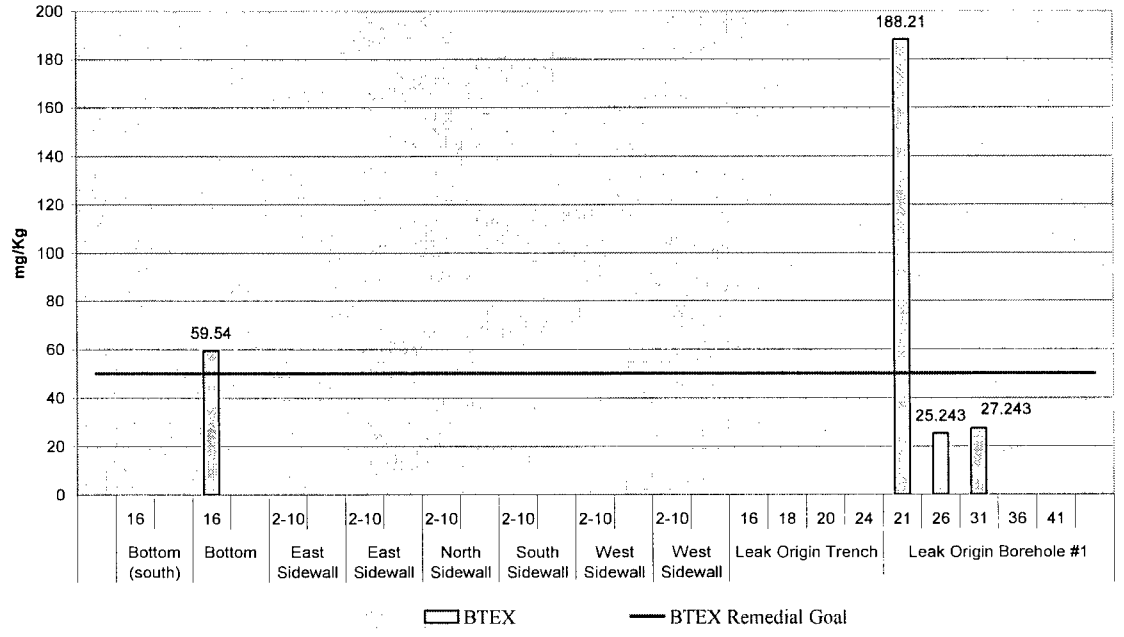
Plains All American Pipeline
Friscoe Skelly #2 #2004-00197
Total Petroleum Hydrocarbon 8015M Delineation



Plains All American Pipeline
Friscoe Skelly #2 #2004-00197
Benzene Delineation



Plains All American Pipeline
Friscoe Skelly #2 #2004-00197
BTEX Delineation



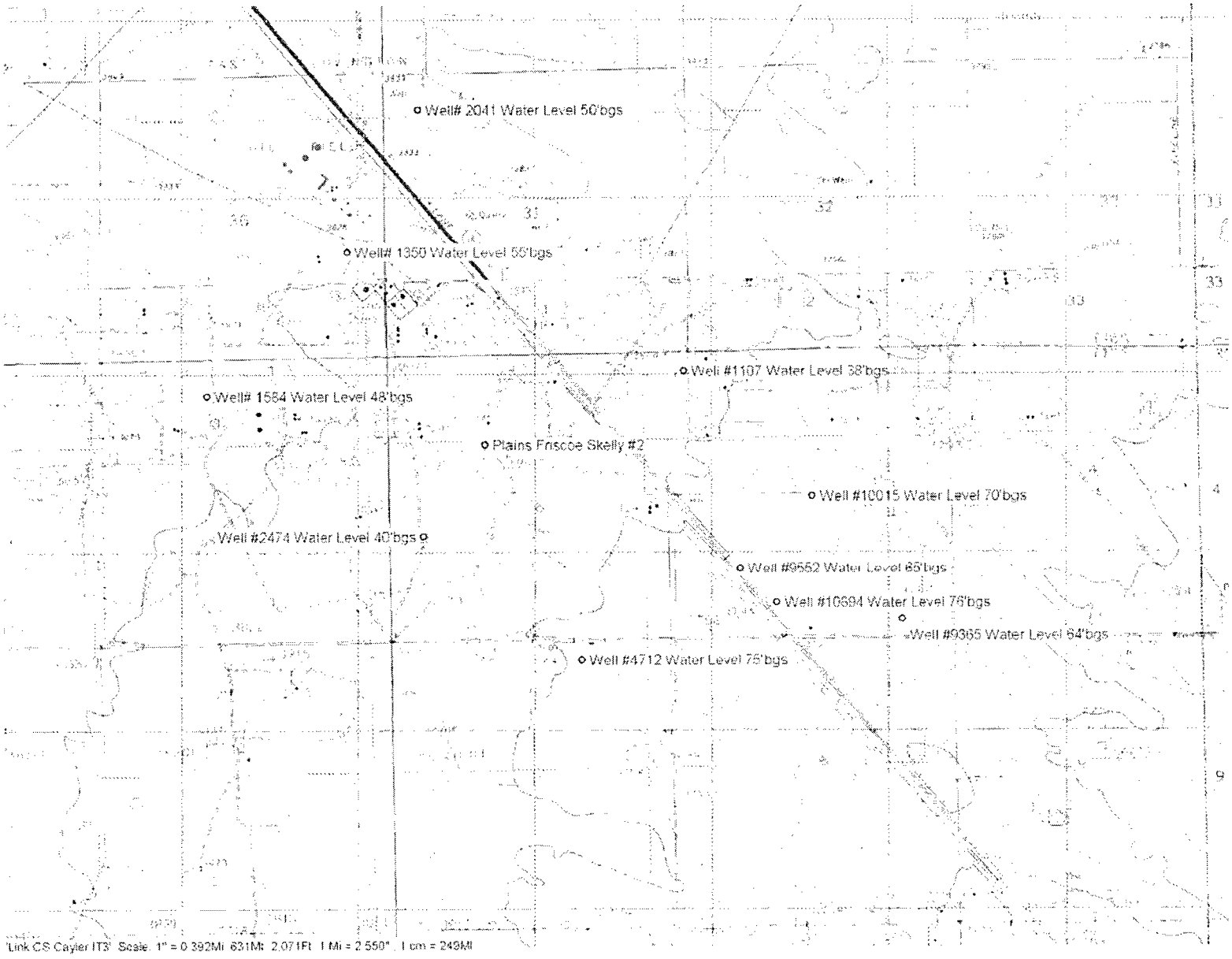
5.0 GROUND WATER INVESTIGATION

The soil investigation indicates the groundwater has not been impacted.

6.0 SOIL REMEDIATION PROPOSAL

To remediate and close the site, Plains proposes to install a 3-foot oversized 20 mil thick polyethylene liner at 16'bgs over the remaining hydrocarbon source term centered beneath the leak origin. This will interrupt the vertical transport mechanism effectively isolating the crude oil residual and protecting the groundwater. Prior to liner installation the excavation bottom will be screened in the field with a PID to determine the exact diameter of the top of the contaminated soil column. This is necessary so that the excavation perimeter can be made to accommodate the 3-foot laterally oversized liner. Because of the rock at the site and the need to protect the liner from abrasion, the excavation bottom will be contoured with a 6 to 8-inch layer of cushioning sand prior to liner installation, similarly, a 6 to 8-inch layer of cushioning sand will be placed on top of the liner prior to backfilling with clean soil. This proposed method will effectively isolate the remaining crude oil source term, negating the vertical transport mechanism, and be protective of the local groundwater. Plains will implement this proposal upon NMOCD approval and submit a report documenting successful implementation of the proposal along with the final form C-141 and a request that the NMOCD require "no further action" be required at the site, except follow-up reseeding consistent with the landowner. Plains will also ensure that the NMOCD is notified at least 48 hours prior to sampling events and liner installation.

ATTACHMENT 1: SITE MAPS


Well# 2041 Water Level 50'bgs
Well# 1350 Water Level 55'bgs
Well #1107 Water Level 38'bgs
Well# 1564 Water Level 48'bgs
Plains Friscoe Skelly #2
Well #10015 Water Level 70'bgs
Well #2474 Water Level 40'bgs
Well #9562 Water Level 85'bgs
Well #10694 Water Level 76'bgs
Well #9365 Water Level 64'bgs
Well #4712 Water Level 75'bgs
'Link CS Cayler IT3' Scale: 1" = 0.392Mi 631Mi 2,071Ft 1 Mi = 2.550" 1 cm = 249Mi

PLAINS ALL AMERICAN
FRISCOE SKELLY
#2
#2004-00197
UL-F SEC 6
T17S R37E
LEA CO NM
AFFECTED AREA
338 SQFT

N

SCALE 1:4,000

0 400.0

FEET

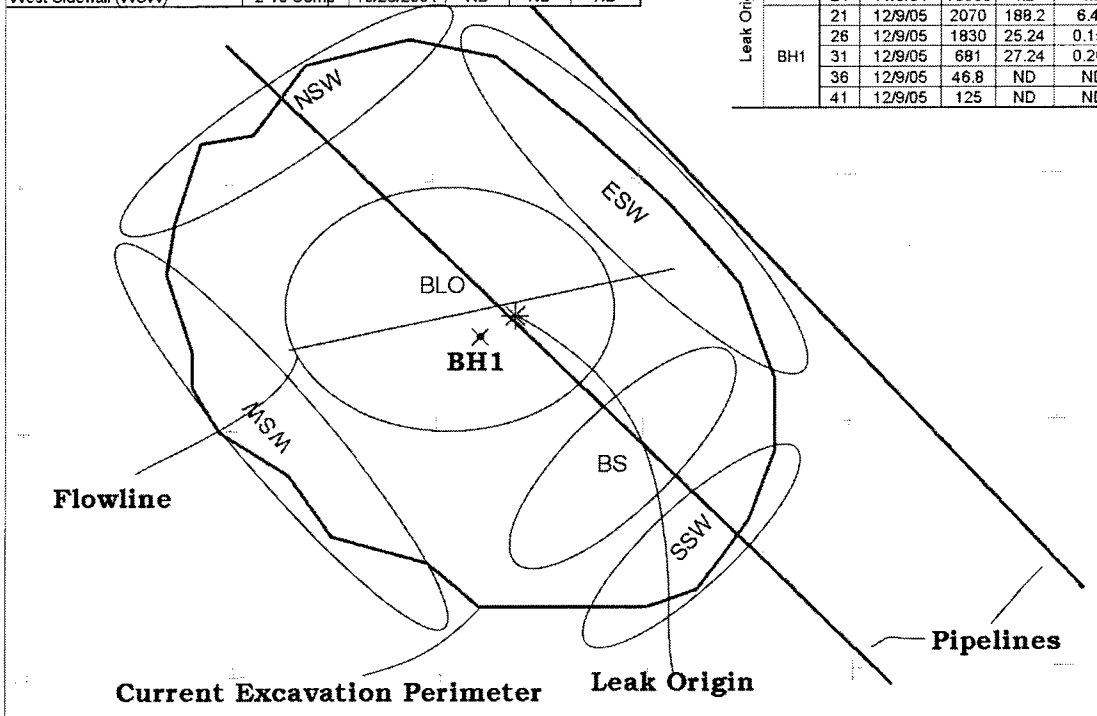
UNIVERSAL TRANSVERSE MERCATOR
13 NORTH
NAD 1983 HPGN (NEW MEXICO)

FRISCOE SKELLY NO ROAD.SSF

10/11/2004

Sample Location	Sampling Interval (FT. BGS)	Date	TPH	BTEX	Benzene
			mg/Kg	mg/Kg	mg/Kg
Bottom (south) (BS)	16	9/24/2004	35.1	ND	ND
Bottom Leak Origin (BLO)	16	10/28/2004	5350	59.54	0.91
East Sidewall (ESW)	2-10 Comp	10/28/2004	ND	ND	ND
North Sidewall (NSW	2-10 Comp	10/28/2004	56.7	ND	ND
South Sidewall (SSW)	2-10 Comp	9/24/2004	25.9	ND	ND
West Sidewall (WSW)	2-10 Comp	10/28/2004	ND	ND	ND

Sample Location		Sampling Interval	Date	TPH	BTEX	Benzene
				mg/Kg	mg/Kg	mg/Kg
Leak Origin	Trench	18	11/9/04	18900	na	na
		20	11/9/04	21300	na	na
		24	11/9/04	10900	na	na
	BH1	21	12/9/05	2070	188.2	6.41
		26	12/9/05	1830	25.24	0.153
		31	12/9/05	681	27.24	0.203
		36	12/9/05	46.8	ND	ND
		41	12/9/05	125	ND	ND



Plains Friscoe Skelly #2 #2004-00197 UL-F Sec 6 T17S R37E Lea Co NM Excavation Map December 2004

N

Scale 1:150

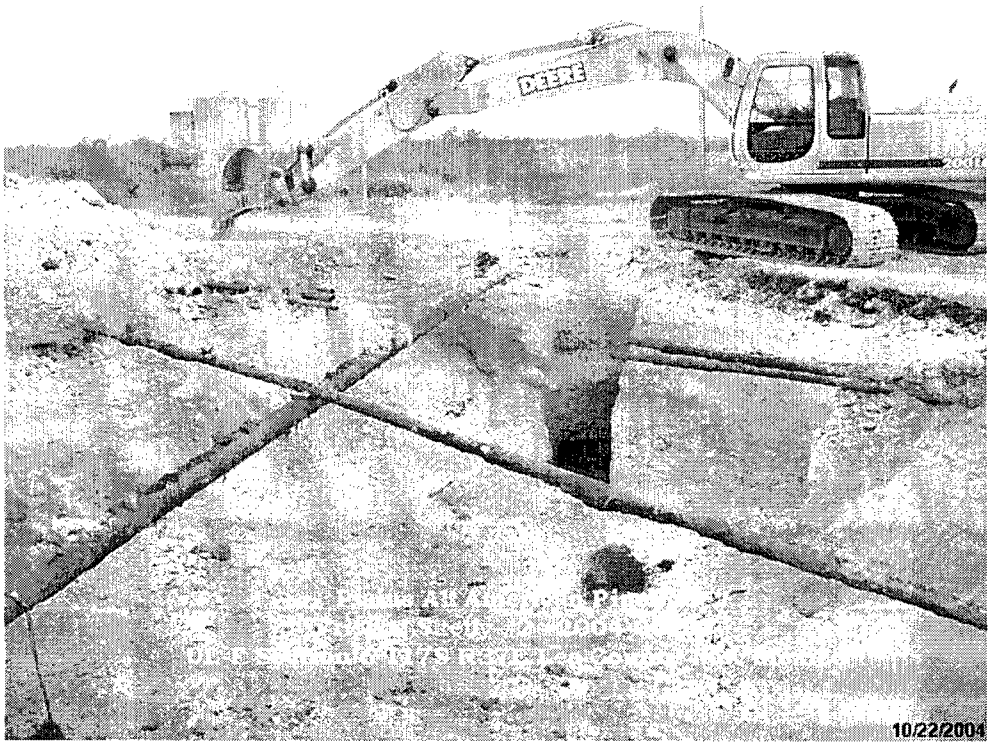
0 15.00

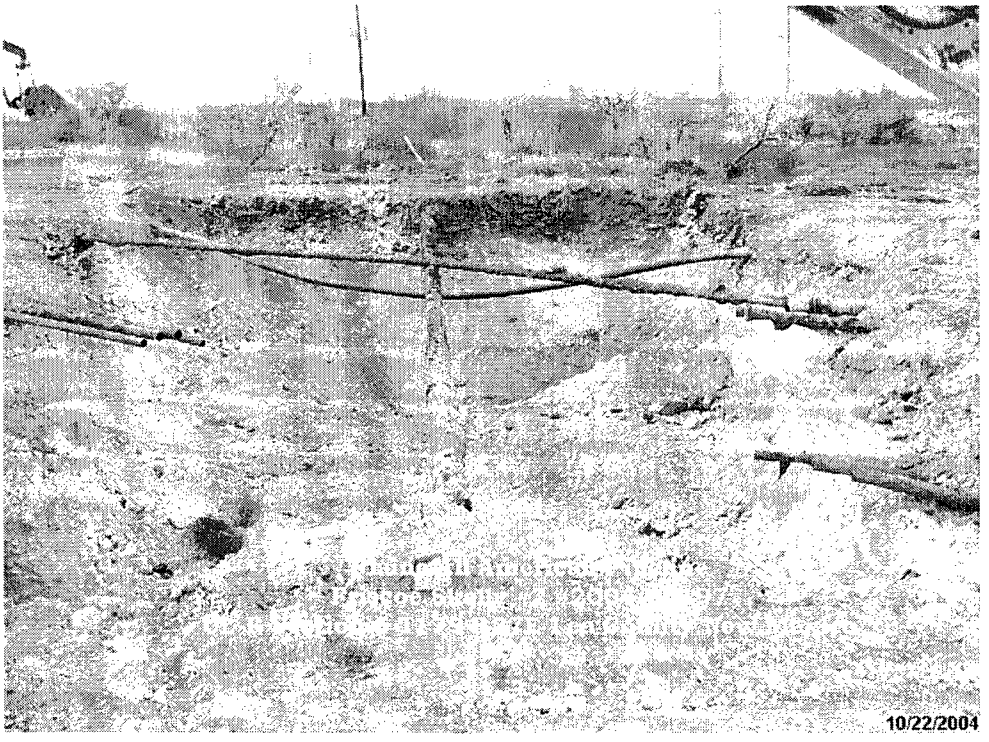
Feet

Universal Transverse Mercator
13 North
NAD 1983 HPGN (New Mexico)

Friscoe Skelly no road.sst
3/6/2005

ATTACHMENT II: PHOTOGRAPHS


10/22/2004


10/22/2004

ATTACHMENT III: ANALYTICAL REPORTS AND SUMMARY

Plains All American Pipeline

Friscoe Skelly #2 #2004-00197 Soil Delineation Information

Sample Location	Vertical Sampling Interval (FT. BGS[1])	SAMPLE ID#	Date	Lithology	VOC[9]	GRO[3]	DRO[4]	TPH[5]	BTEX	Benzene	Toluene	Ethylbenzene	Xylene (m,p)	Xylene (o)
					ppm	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
South Sidewall Composite	2-10	SPFS92404SSWC4'	9/24/2004	Caliche	--	ND	25.9	25.9	ND	ND	ND	ND	ND	ND
East Sidewall Composite	2-10	SPFS92404ESWC4'	9/24/2004	Caliche	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
West Sidewall Composite	2-10	SPFS92404WSWC4'	9/24/2004	Caliche	--	10.9	50.9	61.8	ND	ND	ND	ND	ND	ND
South Bottom Composite	16	SPFS92404BHC16'	9/24/2004	Caliche	--	(7.79J)	35.1	35.1	ND	ND	ND	ND	ND	ND
Bottom	16	SPFS102804BH	10/28/2004	Caliche	140.0	1190	4160	5350	59.540	0.910	11.100	15.300	22.300	9.930
North Sidewall Composite	2-10	SPFS102804NSW	10/28/2004	Caliche	1.6	ND	56.7	56.7	ND	ND	ND	ND	ND	ND
East Sidewall Composite	2-10	SPFS102804ESW	10/28/2004	Caliche	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND
West Sidewall Composite	2-10	SPFS102804WSW	10/28/2004	Caliche	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND
Leak Origin Trench	16	SPFS110904BH16	11/9/2004	Caliche	--	796	2570	3360	na	na	na	na	na	na
Leak Origin Trench	18	SPFS110904BH18	11/9/2004	Caliche	--	8060	18900	18900	na	na	na	na	na	na
Leak Origin Trench	20	SPFS110904BH20	11/9/2004	Caliche	--	8190	13100	21300	na	na	na	na	na	na
Leak Origin Trench	24	SPFS110904BH24	11/9/2004	Caliche	--	4400	6490	10900	na	na	na	na	na	na
Leak Origin Borehole #1	21	F.S. BH#1-5'	12/9/2005	Caliche	426.0	1020	1050	2070	188.210	6.410	55.500	43.600	60.000	22.700
Leak Origin Borehole #1	26	F.S. BH#1-10'	12/9/2005	Caliche	175.0	498	1330	1830	25.243	0.153	4.140	6.810	10.500	3.640
Leak Origin Borehole #1	31	F.S. BH#1-15'	12/9/2005	Sand	171.0	243	438	681	27.243	0.203	4.820	7.240	10.700	4.280
Leak Origin Borehole #1	36	F.S. BH#1-20'	12/9/2005	Sand	7.6	(8.36J)	46.8	46.8	ND	ND	ND	ND	ND	ND
Leak Origin Borehole #1	41	F.S. BH#1-25'	12/9/2005	Sand	4.9	(5.82J)	125	125	ND	ND	ND	ND	ND	ND
New Mexico Oil Conservation Division Site Remedial Goals - Surface to 28'bgs					100			1,000	50	10				
New Mexico Oil Conservation Division Site Remedial Goals - >28'bgs					100			100	50	10				

[1]bgs – below ground surface

[3]GRO-Gasoline Range Organics C_6-C_{10}

[4]DRO-Diesel Range Organics C_{10}-C_{35}

[5]TPH-Total Petroleum Hydrocarbon = GRO+DRO

[6]Bolded values are in excess of the New Mexico Oil Conservation Division guideline threshold for the parameter

[7]Soil chloride residuals must not be capable of impacting groundwater or surface water above Water Quality Control Commission (WQCC) standard of 250 mg/L.

[8]na - not analyzed

[9]VOC - Volatile Organic Constituent/Contaminant Headspace

J - Parameter detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag)

ATTACHMENT IV: AREA WATER INFORMATION

New Mexico Office of the State Engineer
Well Reports and Downloads

Township: 17S Range: 37E Sections: 5,6,7,8

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic
All

Well / Surface Data Report | Avg Depth to Water Report | Water Column Report | Clear Form | WATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 03/09/2005

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet) Min	Max	Avg
L	17S	37E	05				15	38	76	60
L	17S	37E	06				2	40	47	43
L	17S	37E	07				8	39	75	65
L	17S	37E	08				1	50	50	50

Record Count: 26

New Mexico Office of the State Engineer
Well Reports and Downloads

Township: 16S Range: 37E Sections: 31,32

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

Well / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | WATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 03/09/2005

							(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
L	16S	37E	21				8	50	72	53
L	16S	37E	32				3	35	45	38

Record Count: 11

New Mexico Office of the State Engineer
Well Reports and Downloads

Township: 16S Range: 36E Sections: 36

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic
All

Well / Surface Data Report | Avg Depth to Water Report
Water Column Report
Clear Form | WATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 03/09/2005

								(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
L	16S	36E	27				6	40	257	115

Record Count: 6

New Mexico Office of the State Engineer
Well Reports and Downloads

Township: 17S Range: 36E Sections: 1,12

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic
All

Well / Surface Data Report | Avg Depth to Water Report
Water Column Report
Clear Form | WATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 03/09/2005

							(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
L	17S	36E	01				5	48	110	64
L	17S	36E	12				3	45	47	46

Record Count: 9

Attachment V: Site Information & Metrics Form and Informational New Mexico Oil Conservation Division Form C-141

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

Energy Minerals and Natural Resources

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

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**	Contact: **Camille Reynolds**
Address **PO Box 1660 5805 East Highway 80** **Midland, Texas 79702**	Telephone No. **505.393.5611**
Facility Name **Friscoe Skelly #2 #2004-00197**	Facility Type **4" Steel Pipeline**
Surface Owner: **Robert C. Rice**	Mineral Owner / Lease No.

LOCATION OF RELEASE

Unit Letter:	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County:
F	**6**	**T17S**	**R37E**					Lea

Latitude: **32°52'4.316"N** **Longitude:** **103°17'38.146"W**

NATURE OF RELEASE

Type of Release **Crude Oil**	Volume of Release **10 bbls barrels**	Volume Recovered **0 bbls barrels**
Source of Release **4" Steel Pipeline**	Date and Hour of Occurrence	Date and Hour of Discovery
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. **NA**	

If a Watercourse was Impacted, Describe Fully.*
NA

Describe Cause of Problem and Remedial Action Taken.* ***4" Steel Pipeline*** **The cause was either internal or external corrosion. Contaminated soil placed on a plastic barrier.**

Describe Area Affected and Cleanup Action Taken.*
338 sqft 18' x 20': Site delineated. Contaminated soil disposed of in the Lea Station Landfarm. Remedial Goals: TPH 8015m = 1000&100 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: Camille Reynolds	Approved by District Supervisor:	
E-mail Address: CJReynolds@PAALP.com	Approval Date:	Expiration Date:
Title: District Environmental Supervisor	Conditions of Approval:	Attached ☐
Date: Phone: 505.393.5611		

Attach Additional Sheets If Necessary

Plains All American Pipeline Site Information and Metrics	Incident Date: Plains All American Pipeline	NMOCD Notified:

SITE: **Friscoe Skelly #2**	Assigned Site Reference #: **2004-00197**
Company: Plains All American Pipeline	**NATIONAL RESPONSE CENTER - 800.424.8802**
Street Address: PO Box 1660	Notified Date/Time:
Mailing Address: 5805 East Highway 80	Notified by:
City, State, Zip: Midland, Texas 79702	Person Notified:
Representative: Camille Reynolds	NRC Report# :
Representative Telephone: 505.393.5611	
Telephone:	
Fluid volume released (bbls): 10 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: Friscoe Skelly #2	
Source of contamination: 4" Steel Pipeline	
Land Owner, i.e., BLM, ST, Fee, Other: Robert C. Rice	
LSP Dimensions 18' x 20'	
LSP Area: 338 sqft ft^2	
Location of Reference Point (RP)	
Location distance and direction from RP	
Latitude: 32°52'4.316"N	
Longitude: 103°17'38.146"W	
Elevation above mean sea level: 3,810'amsl	
Feet from South Section Line	
Feet from West Section Line	
Location- Unit or ¼¼: SE¼ of the NW¼	Unit Letter: F
Location- Section: 6	
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	
Agricultural water wells within 1000' radius of site: none	
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) ~78 'bgs	
Depth of contamination (DC) –	
Depth to ground water (DG – DC = DtGW) - 0	

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 & 20	*Wellhead Protection Area Score= 0*	*Surface Water Score= 0*

Site Rank (1+2+3) = 10 & 20

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**	**1000 ppm**	5000 ppm

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

District I
1625 N. French Dr., Hobbs, NM 88240

State of New Mexico

Form C-141