1R – 472

REPORT

DATE:

JULY 2006

1R-472
Report
July 2006

PLAINS
PIPELINE, L.P.

August 13, 2007

Mr. Wayne Price
State of New Mexico
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Plains Pipeline, L.P.
Document Submittal – Nine Soil Closure Reports
Clay Osborn - Rocky Top Ranch
Jal, Lea County, New Mexico

Dear Mr. Price:

Plains Pipeline, L.P. (Plains) is pleased to submit the attached Soil Closure Reports for the nine soil remediation project sites located on the Osborn's Rocky Top Ranch in Jal, Lea County, New Mexico. The soil remediation activities were conducted in accordance with the General Remediation Work Plan (dated April 2006) and the Site-Specific Remediation Work Plan (dated July 2006) prepared for each site and approved by the New Mexico Oil Conservation Division (NMOCD).

Based on the analytical laboratory results of confirmation soil samples and completion of the site-specific soil remediation and restoration activities as described in each Work Plan, remediation activities are complete and Plains requests that the NMOCD issue Plains a "no further action letter" and close these nine sites listed below.

Clay Osborn Jalmat #1	1R-0412
Clay Osborn Jalmat #2	1R-0466
Clay Osborn Jalmat #3	1R-0467
Clay Osborn Jalmat #22A	1R-0411
Clay Osborn Jalmat #22B	1R-0468
Clay Osborn East Shell North	1R-0083
Clay Osborn SH-0193-2	1R-0471
Clay Osborn SH-0184-1	1R-0472
Clay Osborn DT-27	1R-0470

Please note that site "Clay Osborn TM-245-2 (1R-0469)" was combined into site "Jalmat #22B" since the sites were immediately adjacent to each other. A separate report was not prepared for TM-245-2.

Should you have any questions or comments, please contact me at (713) 646-4657.

Sincerely,

Jeffrey P. Dann, P.G.
Sr. Environmental Specialist
Plains All American

Attachment: Nine Soil Closure Reports

File: n/jeff-files/Osborn-RockyTopRanch/DocumentClosureReptCovrLtr.doc

Report Entered
1R472
Report
July 2006

Site Closure Report

Clay Osborn Rocky Top Ranch
SH-0184-1 Release Site

SW¼ NE¼, Section 18
T25S, R37E
Lea County, New Mexico

SRS No. ROCKY TOP 2
NMOCD No. 1R-0472

Prepared For

PLAINS
PIPELINE, L.P.

333 Clay Street, Suite 1600
Houston, Texas 77002

Prepared By

SDG ENVIRONMENTAL SERVICES

July 2007

Table of Contents

1.0 Introduction

SDG Environmental Services was retained by Plains Pipeline, L.P. (Plains) to provide oversight of remediation activities and prepare a closure report for the Clay Osborn SH-0184-1 release site located on the Clay Osborn Rocky Top Ranch. Plains Pipeline is the owner/operator of several pipelines preset on the Clay Osborn Rocky Top Ranch in Lea County, New Mexico. Plains retained Basin Environmental Services to conduct the soil excavation/remediation activities.

The site is located in the SW ¼ of the NE ¼ of Section 18, Township 25 South, Range 37 East, approximately 1 mile northwest of Jal at Latitude 32°07′53″ North, and Longitude 103°11′54″ West. A site location map is provided as Figure 1.

The SH-0184-1 release area was characterized by approximately 100 ft^2 of tank bottoms and sediment lying on the surface. The date of the release is not known. The source of the tank bottoms was likely from former crude oil storage tank operations which appeared to have been located nearby. The former tank operations do not appear to be associated with the Plains pipeline.

Plains prepared and submitted a General Remediation Work Plan dated April 2006 to address the release sites located at the Rocky Top Ranch. The objective of the General Remediation Work Plan was to provide a framework for remediation of crude oil impacted sites consistent with the remediation/abatement goals and objectives provided in the New Mexico Oil Conservation Division (NMOCD) "NMOCD Guidelines for Remediation of Leaks, Spills, and Releases." The general Remediation Work Plan was conditionally approved by the NMOCD in a letter to Plains dated May 30, 2006.

The General Remediation Work Plan provided for closure of the site under three possible closure scenarios dependent on the conditions observed in the field. These closure scenarios are as follows.

Work Plan Scenario 1 (Surface Restoration)

This scenario was developed for sites where investigation data indicates that the surface area has restored itself naturally, the surface expression of the release is difficult to identify, the impacts are limited to the surface and/or shallow soils, and there is no threat to groundwater.

- Scrape the surface asphaltines where apparent and remove;
- Blend the underlying 1 to 2 feet of soil with native soil and contour;
- Do not disturb areas that have already re-vegetated.

Work Plan Scenario 2 (Total Excavation)

Areas where impacts greater than 100 mg/kg TPH were limited in vertical extent (i.e. 5 to 10 feet in depth) were recommended to be remediated under the Work Plan Scenario 2 involving the following procedures as outlined in the approved Work Plan including NMOCD conditions presented in the May 2006 NMOCD approval letter.

• Excavation of impacted soil to between 5 to 10 feet bgs or until site remediation standards are met;
• Collect and analyze soil sample from the walls and floor of the excavation to confirm that the remediation has met site guidelines;
• Relocation of excavated soil to the centralized soil treatment area for blending and aeration;
• Collect and analyze treated soil to confirm that the soil treatment activities have met site guidelines;
• Backfill the excavation with treated soil to 100 mg/kg and restore the area to as close as possible to pre-spill conditions.

Work Plan Scenario 3 (Limited Excavation and Risk-based Closure)

At areas of the site where data indicates that soil impacts extend to below 10 feet bgs and excavation of all the impacted soil to below NMOCD guidelines is not practical, Work Plan Scenario 3 was implemented.

Scenario 3 includes the permanent installation of an oversized 20-mil polyethylene liner at a minimum depth of 10 feet to inhibit vertical migration of contaminants in soil left in place below the cap. A 3-foot wide clean area buffer was established around the impacted soil in the floor of the excavation. The buffer extent was determined using a calibrated PID and confirmed by laboratory analysis of grab samples collected around the perimeter of the excavation. The liner was cushioned above and below with a 3 to 4-inch layer of sand to protect it from puncture and tearing during the backfilling process. Installation of the 20-mil polyethylene liner at a minimum depth of 10 feet bgs will protect the barrier from erosion and human intrusion for a term sufficient to allow natural biodegrading of contaminates in the soil.

An initial investigation that included installation of soil borings and collection and analysis of soil samples was conducted by SDG in May 2006. The soil analytical data and information obtained from the site investigation was used to develop a Site Investigation Report and Site-Specific Remediation Work Plan. The Site-Specific Remediation Work Plan dated July 2006 provided for closure of the site under Closure Scenario 2.

The area was excavated to 5 ft bgs and the excavation floor and sidewalls were screened with a PID. A soil sample was collected for laboratory analysis from the bottom of the excavation area defined by the highest PID reading.

Once the excavation was confirmed to meet NMOCD standards, backfilling of the excavation was initiated with the blended soil meeting NMOCD standards from the existing land farm located on ranch property nearby. The backfilled excavation was contoured to the original grade surrounding the site and restored by seeding with approved grass seed.

2.0 Regulatory Framework

In New Mexico, the MNOCD oversees and regulates oil, gas and geothermal activities, including compliance with environmental regulations. The SH-0184-1 Site was evaluated and remediated consistent with the characterization and remediation/abatement goals and objectives of the NMOCD approved General Remediation Work Plan and the NMOCD guidelines defined in the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases* (August 13, 1993). Primary contaminants, or constituents of concern (COCs), associated with crude oil releases include total petroleum hydrocarbons (TPH), benzene, toluene, ethyl benzene, and total xylenes (BTEX). Acceptable levels for these COCs are determined based on a site ranking system. The ranking system estimates the likelihood of exposures to the COCs. The more likely that human exposure will occur, the more stringent the cleanup levels. The site ranking system is set up on the three following parameters:

- Depth to groundwater
- Wellhead protection area
- Distance to surface water body

3.0 Regional and Site Characteristics

3.1 Geological Description

The site is located east of the caprock escarpment which defines the western margin of the high plains or Llano Estacado of southeastern New Mexico. The surface is comprised of rolling hills with sand dunes of Quaternary age deposits, eroded Ogallala Formation and windblown deposits.

3.2 Land Use

Land usage in the area is primarily livestock range land and oil field activities. Several gas driven electric power stations are located in the vicinity of the site and several major oil and gas transmission lines bisect the region. The area in the immediate vicinity of the site is sparsely populated.

3.3 Ground Water

The depth to groundwater at the site is believed to approximately 50 feet below ground surface (bgs) based on measured depth to groundwater at monitor wells located at a neaarby site. The depth to groundwater is consistent with the information provided in the USGS Groundwater Report 6 and the New Mexico Office of the State Engineer database does not list any water wells in Range 37 East of Township 25 South.

4.0 NMOCD Site Ranking

The depth to water at the site is estimated to be approximately 50 feet bgs based on monitor wells located at a nearby site. Based on the analytical results of soil samples, the hydrocarbon impacted soil extends from the surface to 5 feet bgs, therefore, less than 50 feet of non-impacted soil remains between the last known impacted soil depth and groundwater. The resulting Depth to Groundwater Ranking Score is 20.

The site is greater than 1000 ft from any public water supply source and greater than 200 feet from any private domestic water supply well. The resulting Wellhead Protection Ranking Score is 0.

There are no water bodies located within 1000 ft of the site. The resulting Distance to Surface Water Body Ranking Score is 0.

Based on the individual ranking scores identified above, the site has an NMOCD Total Ranking Score of >19, which establish the following remediation levels:

The following table demonstrates the site ranking matrix:

Table 1 – Site Ranking Matrix

Depth to Groundwater	**Wellhead Protection Area**	**Distance to Surface Water**
<50 feet = 20	<1000 feet from a water source, or <200 feet from a domestic water source	<200 feet = 20
50 to 99 feet = 10	Yes = 20	200 to 1000 feet = 10
>100 feet = 0	No = 0	>1000 feet = 0
Groundwater Score = 20	Well Protection Score = 0	Surface Water Score = 0
Total Site Ranking Score = 20		
Parameter	**Score of >19 Maximum Concentrations**	
Benzene	10 ppm	
BTX	50 ppm	
TPH	100 ppm	

Based on this ranking system the site has a total score of 20 resulting in remediation goals of 10 ppm benzene, 50 ppm BTEX and 100 ppm TPH.

5.0 Site Assessment

On 22 May 2006, initial subsurface horizontal and vertical delineation was conducted by SDG with the installation of 5 soil borings installed at the site. The results of the investigation were presented in the July 2006 Site Investigation Report and Site-Specific Remediation Work Plan which was submitted to the NMOCD. Soil borings were

installed to a depth of 15 feet bgs and soil samples were collected at depths of 2, 5, and 15 feet bgs, field screened with a PID, and analyzed for BTEX and TPH. Laboratory results indicated that constituent concentrations of BTEX were either below NMOCD regulatory standards or not detected above laboratory method detection limits on the 15 soil samples. Laboratory results indicated that TPH concentration of 125 mg/kg in one sample from the 2 foot depth directly beneath the tank bottoms on the surface, slightly exceeding the 100 mg/kg TPH NMOCD guidelines. One other sample from 2 ft bgs had a detectable concentration of TPH of 28 mg/kg. The remaining 13 soil samples did not exhibit TPH concentrations above the laboratory method detection limits or NMOCD guidelines.

5.1 Distribution of Hydrocarbons in the Unsaturated Zone

The area of soils remediated was approximately 100 square feet. The vertical extent of soils impacted above the site specific NMOCD cleanup guidelines was determined to be limited to the surface to less than 5 feet bgs. No free phase hydrocarbons were observed during the excavation.

5.2 Distribution of Hydrocarbons in the Saturated Zone

No saturated conditions were reported in any of the borings or observed during later site remediation activities. Monitor wells installed by others at a nearby unrelated release site have recorded water levels of approximately 50 feet bgs. Therefore, there is no indication that hydrocarbons from the SH-0184-1 historical release have impacted the saturated zone.

6.0 Site Remediation

The final surface area remediated was approximately 100 square feet. Approximately 10 cubic yards of bottoms and 18 cubic yards of underlying and surrounding soils were removed. The remediated area is shown in Figure 2.

The area was excavated to 5 ft bgs and the excavation floor and sidewalls were screened with a PID. A soil sample was collected for laboratory analysis from the bottom of the excavation area defined by the highest PID reading.

The tank bottoms and underlying soils were moved to the nearby land farm area located on ranch property and covered with plastic for disposal at a later date. Soils were transported to the Controlled Recovery, Inc. Hobbs, NM on March 23, 2007 for disposal. Waste manifest are provided in Appendix D.

After determining that the confirmation samples did not exceed the site-specific remediation standards, the excavated area was backfilled with blended soils meeting the cleanup guidelines for the closure scenario, contoured to the original grade surrounding the site, and reseeded with approved grass seed.

7.0 Confirmation Sampling and Comparison to Remediation Guideline Standards

The excavation floor and sidewalls were screened with a PID. Only one area located in the floor of the excavation had a detectable reading of 0.8 ppm on the PID. A soil sample was collected for laboratory analysis from this area of the bottom of the excavation area defined by the highest PID reading. The soil sample was submitted to Environmental Lab of Texas for laboratory analyses of total petroleum hydrocarbons (TPH) by EPA Method 8015M (DRO, GRO), and for benzene, toluene, ethyl benzene, and total xylenes (BTEX) by EPA Method 8021B, a copy of the laboratory report is presented in Appendix C. A site detail map identifying soil sample location is presented as Figure 2.

Laboratory results from the soil confirmation sample indicated TPH concentrations of 62.2 mg/kg in soils remaining in the area excavated under Scenario 2, less than the NMOCD standard of 100 mg/kg. Laboratory analyses of BTEX constituents from the sample were below the detection limit of 0.025 mg/kg, a summary of the analytical results is presented in Table 2.

Sample results were compared to the site-specific soil remediation guidelines. As indicated in Table 2 and the laboratory report, all constituents for soils remaining in place are below the site-specific cleanup guidelines for the closure scenario implemented at the site. Therefore, remediation at this site is considered complete.

8.0 Conclusion

SDG Environmental Services was retained by Plains Pipeline, L.P. (Plains) to provide oversight of remediation activities and prepare a closure report for the Clay Osborn SH-0184-1 release site located on the Clay Osborn Rocky Top Ranch. The site is located in the SW ¼ of the NE ¼ of Section 18, Township 25 South, Range 37 East, approximately 1 mile northwest of Jal at Latitude 32°07′53″ North, and Longitude 103°11′54″ West.

The SH-0184-1 release area was characterized by approximately 100 ft^2 of tank bottoms and sediment lying on the surface. The date of the release is not known. The source of the tank bottoms was likely from former crude oil storage tank operations which appeared to have been located nearby. The former tank operations were not associated with the Plains pipeline.

Impacted soils were excavated and confirmation samples were collected and compared to the site-specific cleanup guidelines. Soil samples from the excavated areas confirm that the SH-0184-1 release site was remediated per the NMOCD approved Site-Specific Work Plan. After determining that the confirmation samples did not exceed the site-specific remediation standards, the excavated area was backfilled with blended soils meeting the cleanup guidelines, contoured to the original grade surrounding the site, and reseeded with approved grass seed.

Therefore, remediation at this site has been completed and no further investigation is warranted. SDG recommends that Plains submit a copy of this report to the NMOCD and request that the NMOCD close this case and issue a "no further action letter" to Plains.

TABLE 2

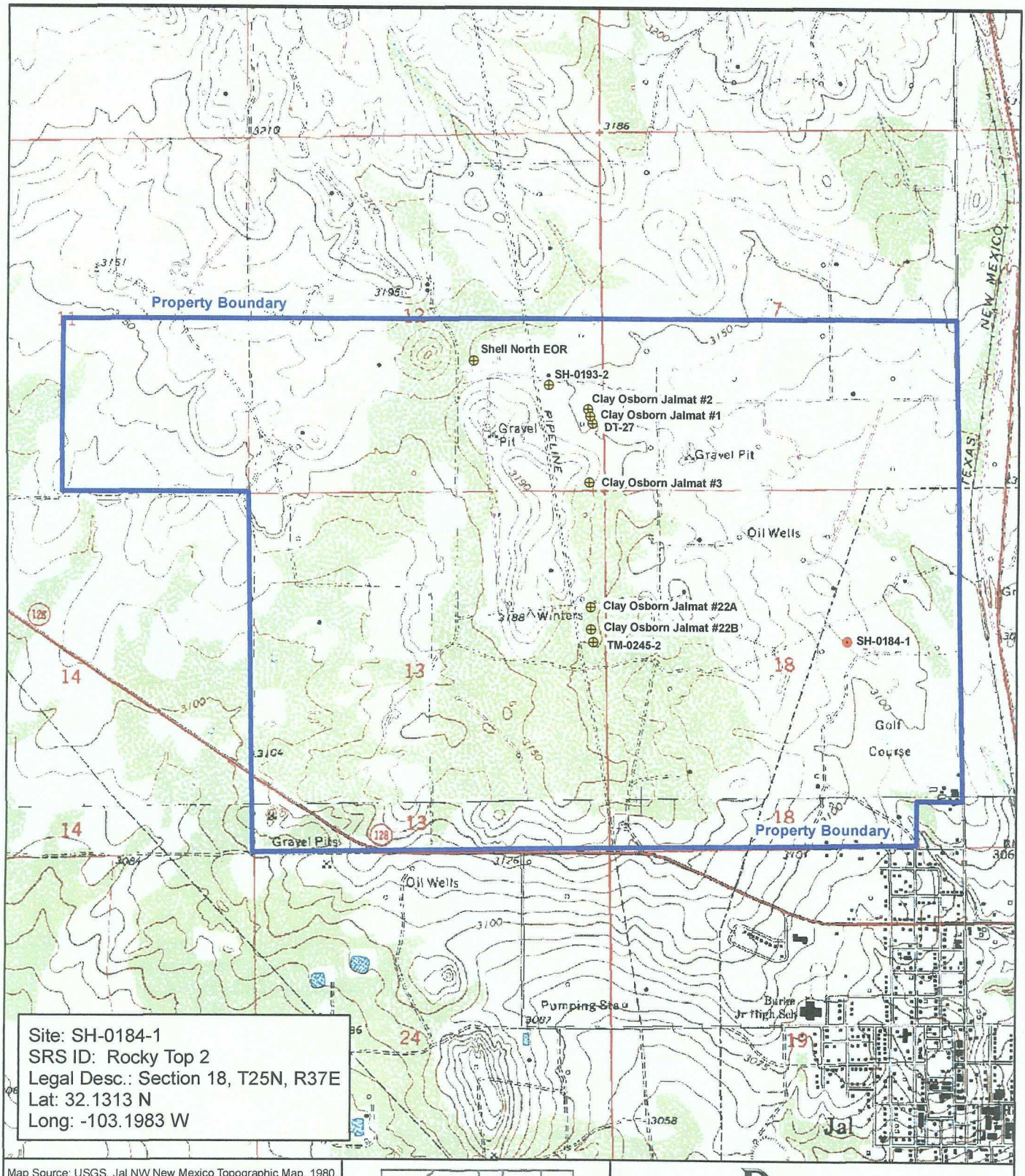
SOIL SAMPLE ANALYTICAL RESULTS SUMMARY

PLAINS PIPELINE, L.P.
Project: SH-0184-1
LEA COUNTY, NEW MEXICO
PLAINS SRS ID: Rocky Top 2

SAMPLE LOCATION	DEPTH ft bgs	SAMPLE DATE	LABORATORY I.D.	METHOD: EPA 8021B					METHOD: EPA 8015M			TOTAL TPH
				BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	M,P-XYLENES (mg/kg)	O-XYLENE (mg/kg)	C6-C12 (mg/kg)	C12-C28 (mg/kg)	C28-C35 (mg/kg)	C6-C35 (mg/kg)
RT2-B	5	10/11/2006	6J11011-02	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<10.0	50.3	11.9	62.2

< indicates the constituent was not detected
J indicates estimated value (detected below method reporting limit
na indicates not analyzed

Appendix A
Figures

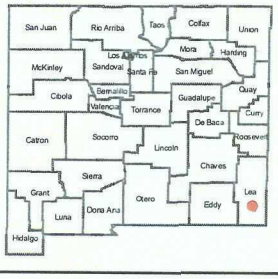


Map Source: USGS, Jal NW New Mexico Topographic Map, 1980.

0 1,000 2,000

Feet

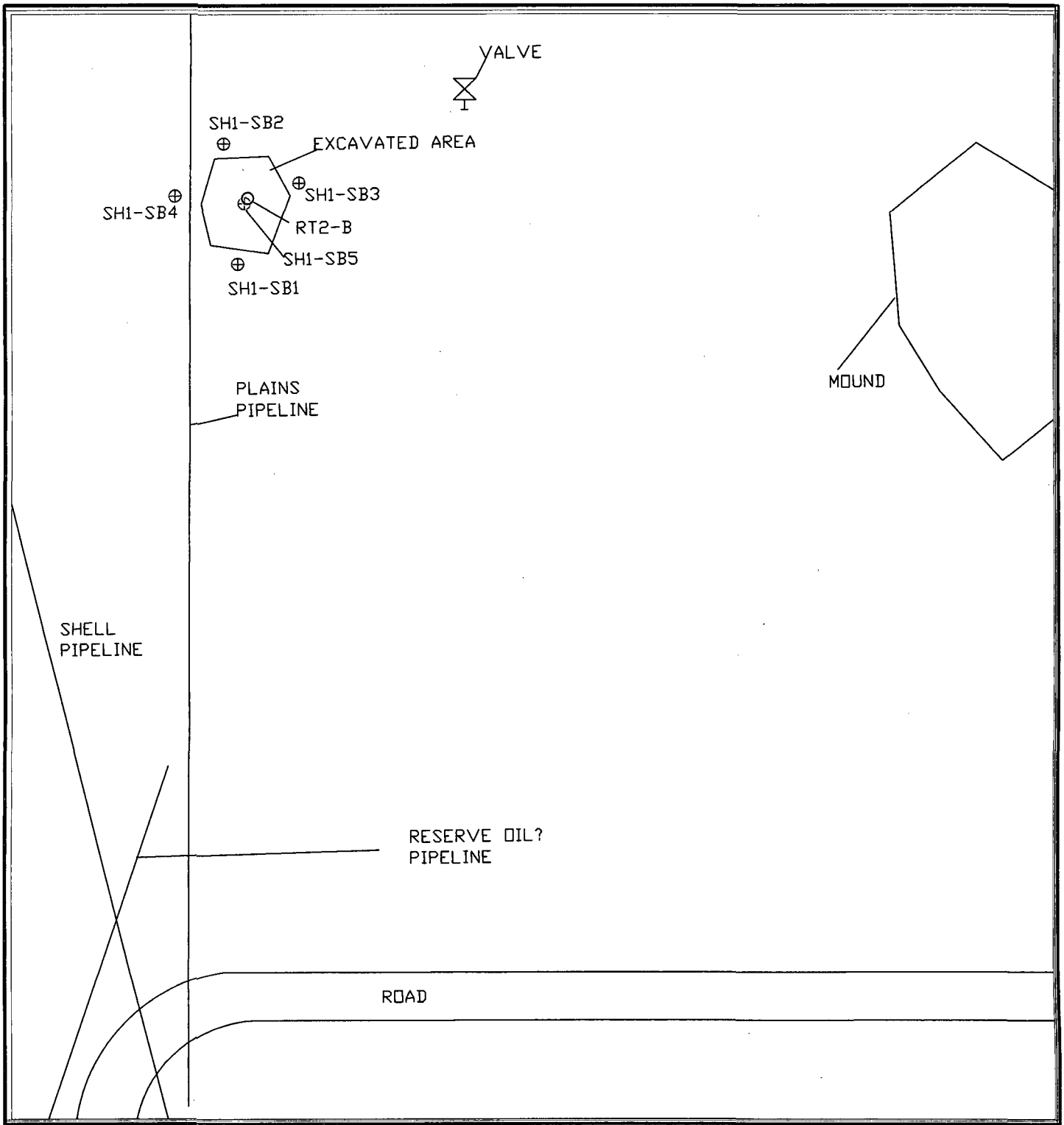
N



SDG ENVIRONMENTAL SERVICES

SH-0184-1
SRS ID: Rocky Top 2
Plains Marketing L.P.
Lea County, New Mexico

Figure 1: Site Location Map



N

0 20

FEET
APPROX. SCALE

LEGEND:

⊕ FORMER SOIL BORING LOCATION

○ CONFIRMATION SAMPLE LOCATION

SDG
ENVIRONMENTAL SERVICES

Figure 2
Rocky Top Ranch
SH-0184-1
Lea County, New Mexico

DWG:	CK:	DATE: 6/06

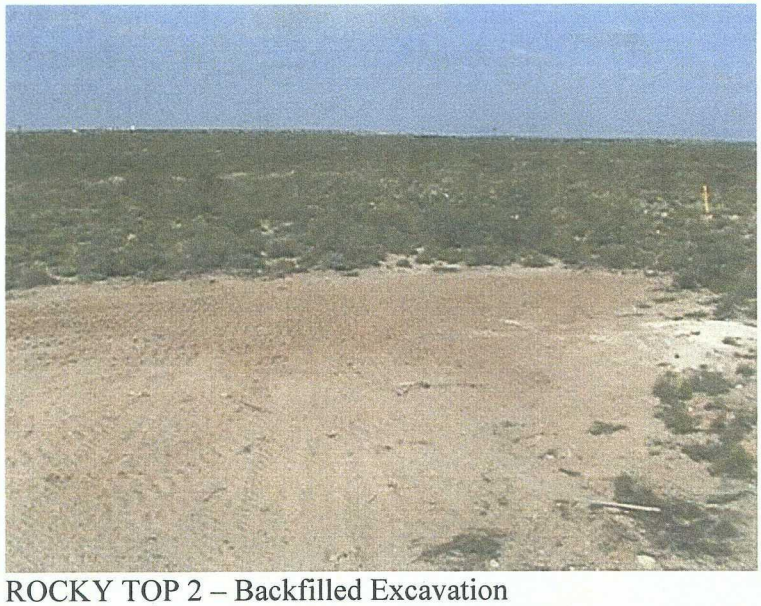
Appendix B
Site Photographs

ROCKY TOP 2- Initial Scrape

ROCKY TOP 2 – Excavation Area

ROCKY TOP 2 – Confirmation Sample Location at Floor of Excavation (~4.5 ft bgs)

ROCKY TOP 2 – Excavated Soils (stockpiled and covered at Land Farm Area)



ROCKY TOP 2 – Backfilled Excavation

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Camille Reynolds

Plains All American EH & S

1301 S. County Road 1150

Midland, TX 79706-4476

Project: Osborne Ranch Site

Project Number: Rocky Top 2

Location: Osborne Ranch

Lab Order Number: 6J11011

Report Date: 10/16/06

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

Project: Osborne Ranch Site
Project Number: Rocky Top 2
Project Manager: Camille Reynolds

Fax: (432) 687-4914

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SEQ- B	6J11011-01	Soil	10/11/06 12:30	10-11-2006 16:00
RT2- B	6J11011-02	Soil	10/11/06 12:55	10-11-2006 16:00

Plains All American EH & S	Project: Osborne Ranch Site	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: Rocky Top 2	
Midland TX, 79706-4476	Project Manager: Camille Reynolds	

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SEQ- B (6J11011-01) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EJ61406	10/14/06	10/14/06	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		*80.2 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*84.5 %*	*80-120*		"	"	"	"	
Carbon Ranges C6-C12	**J [6.65]**	10.0	mg/kg dry	1	EJ61204	10/12/06	10/12/06	EPA 8015M	J
Carbon Ranges C12-C28	**88.7**	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	**34.3**	10.0	"	"	"	"	"	"	
Total Hydrocarbons	**123**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*109 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*102 %*	*70-130*		"	"	"	"	
RT2- B (6J11011-02) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EJ61406	10/14/06	10/14/06	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		*82.8 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*81.8 %*	*80-120*		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EJ61204	10/12/06	10/12/06	EPA 8015M	
Carbon Ranges C12-C28	**50.3**	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	**11.9**	10.0	"	"	"	"	"	"	
Total Hydrocarbons	**62.2**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*122 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*109 %*	*70-130*		"	"	"	"	

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

Plains All American EH & S	Project: Osborne Ranch Site	Fax: (432) 687-4914
1301 S. County Road 1150	Project Number: Rocky Top 2	
Midland TX, 79706-4476	Project Manager: Camille Reynolds	

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SEQ- B (6J11011-01) Soil									
% Moisture	**3.4**	0.1	%	1	EJ61113	10/11/06	10/12/06	% calculation	
RT2- B (6J11011-02) Soil									
% Moisture	**7.9**	0.1	%	1	EJ61113	10/11/06	10/12/06	% calculation	

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

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

Project: Osborne Ranch Site
Project Number: Rocky Top 2
Project Manager: Camille Reynolds

Fax: (432) 687-4914

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 EJ61204 - Solvent Extraction (GC)										
Blank (EJ61204-BLK1)				Prepared & Analyzed: 10/12/06						
Carbon Ranges C6-C12	ND	10.0	mg/kg wet							
Carbon Ranges C12-C28	ND	10.0	"							
Carbon Ranges C28-C35	ND	10.0	"							
Total Hydrocarbons	ND	10.0	"							
Surrogate: 1-Chlorooctane	*52.3*		*mg/kg*	*50.0*		*105*	*70-130*			
Surrogate: 1-Chlorooctadecane	*48.0*		"	*50.0*		*96.0*	*70-130*			
LCS (EJ61204-BS1)				Prepared & Analyzed: 10/12/06						
Carbon Ranges C6-C12	417	10.0	mg/kg wet	500		83.4	75-125			
Carbon Ranges C12-C28	400	10.0	"	500		80.0	75-125			
Carbon Ranges C28-C35	ND	10.0	"	0.00			75-125			
Total Hydrocarbons	817	10.0	"	1000		81.7	75-125			
Surrogate: 1-Chlorooctane	*61.5*		*mg/kg*	*50.0*		*123*	*70-130*			
Surrogate: 1-Chlorooctadecane	*49.1*		"	*50.0*		*98.2*	*70-130*			
Calibration Check (EJ61204-CCV1)				Prepared & Analyzed: 10/12/06						
Carbon Ranges C6-C12	214		mg/kg	250		85.6	80-120			
Carbon Ranges C12-C28	285		"	250		114	80-120			
Total Hydrocarbons	499		"	500		99.8	80-120			
Surrogate: 1-Chlorooctane	*62.3*		"	*50.0*		*125*	*70-130*			
Surrogate: 1-Chlorooctadecane	*53.6*		"	*50.0*		*107*	*70-130*			
Matrix Spike (EJ61204-MS1)	**Source: 6J11011-02**			Prepared & Analyzed: 10/12/06						
Carbon Ranges C6-C12	551	10.0	mg/kg dry	543	ND	101	75-125			
Carbon Ranges C12-C28	566	10.0	"	543	50.3	95.0	75-125			
Carbon Ranges C28-C35	13.9	10.0	"	0.00	11.9		75-125			
Total Hydrocarbons	1130	10.0	"	1090	62.2	98.0	75-125			
Surrogate: 1-Chlorooctane	*64.4*		*mg/kg*	*50.0*		*129*	*70-130*			
Surrogate: 1-Chlorooctadecane	*60.5*		"	*50.0*		*121*	*70-130*			

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

Project: Osborne Ranch Site
Project Number: Rocky Top 2
Project Manager: Camille Reynolds

Fax: (432) 687-4914

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 EJ61204 - Solvent Extraction (GC)										
Matrix Spike Dup (EJ61204-MSD1)	**Source: 6J11011-02**			Prepared & Analyzed: 10/12/06						
Carbon Ranges C6-C12	516	10.0	mg/kg dry	543	ND	95.0	75-125	6.56	20	
Carbon Ranges C12-C28	546	10.0	"	543	50.3	91.3	75-125	3.60	20	
Carbon Ranges C28-C35	7.58	10.0	"	0.00	11.9		75-125	58.8	20	J
Total Hydrocarbons	1060	10.0	"	1090	62.2	91.5	75-125	6.39	20	
Surrogate: 1-Chlorooctane	*64.5*		*mg/kg*	*50.0*		*129*	*70-130*			
Surrogate: 1-Chlorooctadecane	*56.0*		*"*	*50.0*		*112*	*70-130*			
Batch EJ61406 - EPA 5030C (GC)										
Blank (EJ61406-BLK1)				Prepared: 10/14/06 Analyzed: 10/15/06						
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	*32.1*		*ug/kg*	*40.0*		*80.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*32.5*		*"*	*40.0*		*81.2*	*80-120*			
LCS (EJ61406-BS1)				Prepared & Analyzed: 10/14/06						
Benzene	1.14	0.0250	mg/kg wet	1.25		91.2	80-120			
Toluene	1.03	0.0250	"	1.25		82.4	80-120			
Ethylbenzene	1.14	0.0250	"	1.25		91.2	80-120			
Xylene (p/m)	2.03	0.0250	"	2.50		81.2	80-120			
Xylene (o)	1.04	0.0250	"	1.25		83.2	80-120			
Surrogate: a,a,a-Trifluorotoluene	*32.5*		*ug/kg*	*40.0*		*81.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*33.7*		*"*	*40.0*		*84.2*	*80-120*			

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

Project: Osborne Ranch Site
Project Number: Rocky Top 2
Project Manager: Camille Reynolds

Fax: (432) 687-4914

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 EJ61406 - EPA 5030C (GC)										
Calibration Check (EJ61406-CCV1)				Prepared: 10/14/06 Analyzed: 10/15/06						
Benzene	0.0444		mg/kg wet	0.0500		88.8	80-120			
Toluene	0.0412		"	0.0500		82.4	80-120			
Ethylbenzene	0.0413		"	0.0500		82.6	80-120			
Xylene (p/m)	0.0826		"	0.100		82.6	80-120			
Xylene (o)	0.0419		"	0.0500		83.8	80-120			
Surrogate: a,a,a-Trifluorotoluene	*33.0*		*ug/kg*	*40.0*		*82.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*34.8*		*"*	*40.0*		*87.0*	*80-120*			
Matrix Spike (EJ61406-MS1)		**Source: 6J13005-05**		Prepared: 10/14/06 Analyzed: 10/15/06						
Benzene	1.35	0.0250	mg/kg dry	1.48	ND	91.2	80-120			
Toluene	1.24	0.0250	"	1.48	ND	83.8	80-120			
Ethylbenzene	1.46	0.0250	"	1.48	ND	98.6	80-120			
Xylene (p/m)	2.50	0.0250	"	2.96	ND	84.5	80-120			
Xylene (o)	1.27	0.0250	"	1.48	ND	85.8	80-120			
Surrogate: a,a,a-Trifluorotoluene	*34.4*		*ug/kg*	*40.0*		*86.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*40.4*		*"*	*40.0*		*101*	*80-120*			
Matrix Spike Dup (EJ61406-MSD1)		**Source: 6J13005-05**		Prepared: 10/14/06 Analyzed: 10/16/06						
Benzene	1.34	0.0250	mg/kg dry	1.48	ND	90.5	80-120	0.770	20	
Toluene	1.25	0.0250	"	1.48	ND	84.5	80-120	0.832	20	
Ethylbenzene	1.41	0.0250	"	1.48	ND	95.3	80-120	3.40	20	
Xylene (p/m)	2.58	0.0250	"	2.96	ND	87.2	80-120	3.15	20	
Xylene (o)	1.22	0.0250	"	1.48	ND	82.4	80-120	4.04	20	
Surrogate: a,a,a-Trifluorotoluene	*33.2*		*ug/kg*	*40.0*		*83.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*39.2*		*"*	*40.0*		*98.0*	*80-120*			

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

Project: Osborne Ranch Site
Project Number: Rocky Top 2
Project Manager: Camille Reynolds

Fax: (432) 687-4914

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 EJ61113 - General Preparation (Prep)										
Blank (EJ61113-BLK1)				Prepared & Analyzed: 10/11/06						
% Solids	99.9		%							
Duplicate (EJ61113-DUP1)		**Source: 6J10011-01**		Prepared & Analyzed: 10/11/06						
% Solids	94.6		%		95.2			0.632	20	
Duplicate (EJ61113-DUP2)		**Source: 6J11001-12**		Prepared & Analyzed: 10/11/06						
% Solids	88.2		%		89.1			1.02	20	
Duplicate (EJ61113-DUP3)		**Source: 6J11011-01**		Prepared: 10/11/06 Analyzed: 10/12/06						
% Solids	96.8		%		96.6			0.207	20	

Notes and Definitions

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: Celey D. Keene Date: 10/16/2006

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director
La Tasha Cornish, Chemist
Sandra Sanchez, Lab Tech.

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Camile Reynolds
Company Name: Plains Marketing
Company Address: Report to: SDG Environmental Svcs
City/State/Zip:
Telephone No:
Fax No: kcody@sdgenv.com
Sampler Signature:
e-mail:

Project Name: Osborne Ranch Sites
Project #: Rocky Top 2
Project Loc: Osborne Ranch
PO #: Rocky Top 2
Report Format: ☐ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 675111011

Douglas

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	No. of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 / 8015M / 1006	TOTAL: Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
01	SEQ-B			10/10/06	12:30	1	✓								S	✓							✓				
02	RT2-B			10/10/06	12:55	1	✓								S	✓							✓				

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
	10/10/06	4:00PM			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
				10/11/06	4:60

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

W/ label

Temperature Upon Receipt: 4.0 °C

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Plains

ate/ Time: 10/11/11 4:00

Lab ID # : 610101

nitials: CK

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	Yes	No	6.6 °C	
#2	Shipping container in good condition?	~~Yes~~	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	~~Not Present~~	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	~~Not Present~~	
#5	Chain of Custody present?	~~Yes~~	No		
#6	Sample instructions complete of Chain of Custody?	~~Yes~~	No		
#7	Chain of Custody signed when relinquished/ received?	~~Yes~~	No		
#8	Chain of Custody agrees with sample label(s)?	~~Yes~~	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	~~Yes~~	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	~~Yes~~	No		
#11	Containers supplied by ELOT?	~~Yes~~	No		
#12	Samples in proper container/ bottle?	~~Yes~~	No	See Below	
#13	Samples properly preserved?	~~Yes~~	No	See Below	
#14	Sample bottles intact?	~~Yes~~	No		
#15	Preservations documented on Chain of Custody?	~~Yes~~	No		
#16	Containers documented on Chain of Custody?	~~Yes~~	No		
#17	Sufficient sample amount for indicated test(s)?	~~Yes~~	No	See Below	
#18	All samples received within sufficient hold time?	~~Yes~~	No	See Below	
#19	VOC samples have zero headspace?	~~Yes~~	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken:

Check all that Apply:

- ☐ See attached e-mail/ fax
- ☐ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

Appendix D
Waste Manifests

Lea Station Land Farm
PERMIT #GW-351

CERTIFICATE OF "NON-EXEMPT" WASTE STATUS
AND
TRANSPORTER MANIFEST AND CHAIN-OF-CUSTODY

COMPANY PLAINS PIPELINE

ORIGIN UL OR ¼¼: SE¼ SEC 7-T 25S-R37E

SOURCE DESCRIPTION SH-01841- SRS #Rocky Top #2

AS A CONDITION OF ACCEPTANCE FOR DISPOSAL, I HEREBY CERTIFY THAT THIS WASTE IS A **NON-EXEMPT** WASTE AS DEFINED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA) JULY 1988 REGULATORY DETERMINATION AND TO MY KNOWLEDGE, THIS WASTE BEEN CHARACTERIZED AS "NON-HAZARDOUS" PURSUANT TO THE PROVISIONS OF EPA 40 CFR PART 261 SUBPART C AND HAS NOT BEEN COMINGLED WITH AN EPA 40 CFR PART 261 SUBPART D "LISTED WASTE." LIKEWISE, THIS WASTE DOES NOT CONTAIN NATURALLY OCCURRING RADIOACTIVE MATERIAL (NORM) PURUSANT TO 20 NMAC 3.1 SUBPART 1403 AND CONTAINS NO FREE LIQUID PURSUANT TO THE "PAINT FILTER TEST" EPA METHOD 9095A.

NORM EXPOSURE RATE: 13 µR/HR

I, CAMILLE REYNOLDS, THE UNDERSIGNED AGENT FOR, PLAINS ALL AMERICAN, HEREBY CERTIFY THAT, BASED ON PERSONAL KNOWLEDGE, THE ABOVE STATEMENT IS TRUE AND CORRECT.

NAME CAMILLE REYNOLDS
TITLE ENVIRONMENTAL COORDINATOR
ADDRESS 3112 WEST US HWY 82
LOVINGTON, NEW MEXICO 88260
SIGNATURE Camille Reynolds
DATE 3/6/07

TRANSPORTATION MANIFEST AND CHAIN-OF-CUSTODY

Transporting Co.: BASIN ENV.	Driver Signature:
Volume: 12 yd³	Signature Date: 3-23-07
Plains All American Lea Station Landfarm Attendant Signature	
Signature Date:	

CONTROLLED RECOVERY, INC.

P.O. Box 388 • Hobbs, New Mexico 88241-0388

(505) 393-7971

www.crihobbs.com

Ticket No. _____

Company/Generator _____

Lease Name _____

Trucking Company | Vehicle Number | Driver (Print) _____

Date | Time a.m. / p.m.

Type of Material

- ❑ Exempt
- ❑ Non-Exempt
- C138 _____
- ❑ Tank Bottoms
- C117 _____
- ❑ Soils
- ❑ Fluids
- ❑ Other Material
- List Description Below

DESCRIPTION

Volume of Material ❑ Bbls. _____ ❑ Yard _____ ❑ Gallons _____

❑ Wash Out ❑ Call Out ❑ After Hours ❑ Debris Charge

This statement applicable to exempt waste only.
I represent and warrant that the wastes are: generated from oil and gas exploration and production operations: exempt from Resource Conservation and Recover Act (RCRA) Subtitle C Regulations; and not mixed with non-exempt wastes.

Agent _____
(Signature)

CRI Representative _____
(Signature)

TANK BOTTOMS

	Feet	Inches				
1st Gauge			BBLS Received		BS&W	%
2nd Gauge			Free Water			
Received			Total Received			

119919

White - CRI | Canary - CRI Accounting | Pink - CRI Plant | Gold - Transporter

Lea Station Land Farm
PERMIT #GW-351

CERTIFICATE OF "NON-EXEMPT" WASTE STATUS
AND
TRANSPORTER MANIFEST AND CHAIN-OF-CUSTODY

COMPANY PLAINS PIPELINE

ORIGIN UL OR ¼¼: SE¼ SEC 7-T 25S-R37E

SOURCE DESCRIPTION SH-0184-1- SRS# Rocky Top #2

AS A CONDITION OF ACCEPTANCE FOR DISPOSAL, I HEREBY CERTIFY THAT THIS WASTE IS A **NON-EXEMPT** WASTE AS DEFINED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA) JULY 1988 REGULATORY DETERMINATION AND TO MY KNOWLEDGE, THIS WASTE BEEN CHARACTERIZED AS "NON-HAZARDOUS" PURSUANT TO THE PROVISIONS OF EPA 40 CFR PART 261 SUBPART C AND HAS NOT BEEN COMINGLED WITH AN EPA 40 CFR PART 261 SUBPART D "LISTED WASTE." LIKEWISE, THIS WASTE DOES NOT CONTAIN NATURALLY OCCURRING RADIOACTIVE MATERIAL (NORM) PURUSANT TO 20 NMAC 3.1 SUBPART 1403 AND CONTAINS NO FREE LIQUID PURSUANT TO THE "PAINT FILTER TEST" EPA METHOD 9095A.

NORM EXPOSURE RATE: 13 µR/HR

I, CAMILLE REYNOLDS, THE UNDERSIGNED AGENT FOR, PLAINS ALL AMERICAN, HEREBY CERTIFY THAT, BASED ON PERSONAL KNOWLEDGE, THE ABOVE STATEMENT IS TRUE AND CORRECT.

NAME CAMILLE REYNOLDS
TITLE ENVIRONMENTAL COORDINATOR
ADDRESS 3112 WEST US HWY 82
LOVINGTON, NEW MEXICO 88260
SIGNATURE Camille Reynolds
DATE 3/16/07

TRANSPORTATION MANIFEST AND CHAIN-OF-CUSTODY

Transporting Co.: BASIN ENV.	Driver Signature: Jason Hutchins
Volume: 12 yd³	Signature Date: 3-23-07
Plains All American Lea Station Landfarm Attendant Signature	
Signature Date:	

CONTROLLED RECOVERY, INC.

P.O. Box 388 • Hobbs, New Mexico 88241-0388
(505) 393-1079
www.crihobbs.com

Bill to _____

Address _____

Company/Generator _____

Lease Name _____

Trucking Company	Vehicle Number	Driver (Print)
Date	Time	a.m. / p.m.

Type of Material

❑ Exempt	❑ Tank Bottoms	❑ Fluids
❑ Non-Exempt	C117 _____	❑ Other Material
C138 _____	❑ Soils	List Description Below

DESCRIPTION

Volume of Material ❑ Bbls. _____ ❑ Yard _____ ❑ Gallons _____

❑ Wash Out ❑ Call Out ❑ After Hours ❑ Debris Charge

This statement applicable to exempt waste only.
I represent and warrant that the wastes are: generated from oil and gas exploration and production operations: exempt from Resource Conservation and Recover Act (RCRA) Subtitle C Regulations; and not mixed with non-exempt wastes.

Agent _____
(Signature)

CRI Representative _____
(Signature)

TANK BOTTOMS

	Feet	Inches			
1st Gauge			BBLS Received		BS&W %
2nd Gauge			Free Water		
Received			Total Received		

118969

White - CRI | Canary - CRI Accounting | Pink - CRI Plant | Gold - Transporter

Lea Station Land Farm
PERMIT #GW-351

CERTIFICATE OF "NON-EXEMPT" WASTE STATUS
AND
TRANSPORTER MANIFEST AND CHAIN-OF-CUSTODY

COMPANY PLAINS PIPELINE

ORIGIN UL OR ¼¼: SE¼ SEC-7-T25S-R37E

SOURCE DESCRIPTION SH-0184-1 - SRS# Rocky Top #2

AS A CONDITION OF ACCEPTANCE FOR DISPOSAL, I HEREBY CERTIFY THAT THIS WASTE IS A **NON-EXEMPT** WASTE AS DEFINED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA) JULY 1988 REGULATORY DETERMINATION AND TO MY KNOWLEDGE, THIS WASTE BEEN CHARACTERIZED AS "NON-HAZARDOUS" PURSUANT TO THE PROVISIONS OF EPA 40 CFR PART 261 SUBPART C AND HAS NOT BEEN COMINGLED WITH AN EPA 40 CFR PART 261 SUBPART D "LISTED WASTE." LIKEWISE, THIS WASTE DOES NOT CONTAIN NATURALLY OCCURRING RADIOACTIVE MATERIAL (NORM) PURUSANT TO 20 NMAC 3.1 SUBPART 1403 AND CONTAINS NO FREE LIQUID PURSUANT TO THE "PAINT FILTER TEST" EPA METHOD 9095A.

NORM EXPOSURE RATE: 13 µR/HR

I, CAMILLE REYNOLDS, THE UNDERSIGNED AGENT FOR, PLAINS ALL AMERICAN, HEREBY CERTIFY THAT, BASED ON PERSONAL KNOWLEDGE, THE ABOVE STATEMENT IS TRUE AND CORRECT.

NAME CAMILLE REYNOLDS
TITLE ENVIRONMENTAL COORDINATOR
ADDRESS 3112 WEST US HWY 82
LOVINGTON, NEW MEXICO 88260
SIGNATURE Camille Reynolds
DATE 3/6/07

TRANSPORTATION MANIFEST AND CHAIN-OF-CUSTODY

Transporting Co.: BASIN ENV.	Driver Signature: Judson Hutchins
Volume: 12 yd³	Signature Date: 3-23-07
Plains All American Lea Station Landfarm Attendant Signature	
Signature Date:	

CRI

CONTROLLED RECOVERY, INC.

P.O. Box 388 • Hobbs, New Mexico 88241-0388
(505) 393-1079
www.crihobbs.com

Bill to _____

Address _____

_____

Company/Generator _____

Lease Name _____

Trucking Company	Vehicle Number	Driver (Print)
Date	Time	a.m. / p.m.

Type of Material

❑ Exempt	❑ Tank Bottoms	❑ Fluids
❑ Non-Exempt	C117_____	❑ Other Material
C138 _____	❑ Soils	List Description Below

DESCRIPTION

Volume of Material ❑ Bbls. _____ ❑ Yard _____ ❑ Gallons _____

❑ Wash Out ❑ Call Out ❑ After Hours ❑ Debris Charge

This statement applicable to exempt waste only.
I represent and warrant that the wastes are: generated from oil and gas exploration and production operations: exempt from Resource Conservation and Recover Act (RCRA) Subtitle C Regulations; and not mixed with non-exempt wastes.

Agent _____
(Signature)

CRI Representative _____
(Signature)

TANK BOTTOMS

	Feet	Inches			
1st Gauge			BBLS Received		BS&W %
2nd Gauge			Free Water		
Received			Total Received		

White - CRI Canary - CRI Accounting Pink - CRI Plant Gold - Transporter