1R – 466

REPORT

DATE:
MAY 2007

1R-466
Report
May 2007

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

Site Closure Report

Clay Osborn Rocky Top Ranch
Jalmat #2 Release Site

SE¼ SE¼, Section 12
T25S, R36E
Lea County, New Mexico

SRS No. 2000-10607
NMOCD No. 1R-0466

Prepared For

PLAINS
PIPELINE, L.P.

333 Clay Street, Suite 1600
Houston, Texas 77002

Prepared By

SDG ENVIRONMENTAL SERVICES

May 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 Jalmat #2 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 SE ¼ of the SE ¼ of Section 12, Township 25 South, Range 36 East, approximately 1 mile northwest of Jal at Latitude 32°08′27″ North, and Longitude 103°12′38″ West. A site location map is provided as Figure 1.

The hydrocarbon impacted area was the result of a historical release. The date of the release as well as the volume of crude released and recovered is not known. The Jalmat #2 Site was initially investigated and characterized in 2000.

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.

Soil analytical data and information obtained from the EPI December 2001 Jalmat #2 Site Investigation Report was used to develop a Site Investigation Report and Site-Specific Remediation Work Plan. The Site Investigation Report and Site-Specific Remediation Work Plan dated July 2006 provided for closure of the site under the Work Plan Scenario 1.

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.

Overburden soils consisting of windblown sand that had covered the asphaltines and the asphaltines were removed and transported to the centrally located land farm where they were blended, stockpiled and sampled. The scraped area was backfilled with clean ranch soil obtained from the landowner, 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 Jalmat #2 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 approximately 50 feet below ground surface (bgs) based on measured depth to groundwater at monitor wells located at a nearby release 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 36 East of Township 25.

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 release site. Hydrocarbon asphaltines were present at the surface or beneath windblown sand. Based on the analytical results of soil samples, impacted soil did not extend to 2 feet bgs, therefore, it is possible that 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	
BTEX	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 27 June 2000 through 13 July 2000, initial subsurface horizontal and vertical delineation was conducted by EPI with the installation of 27 soil borings installed at the site. Twenty-six (26) soil borings were installed to a depth of 15 feet bgs and soil samples were collected at depths of 2, 5, 10, and 15 feet bgs, field screened with a PID, and analyzed for BTEX and TPH-GRO/DRO. One soil boring was installed to 25 feet

bgs and soil samples also collected at 20 and 25 feet bgs. Laboratory results indicated that constituent concentrations of BTEX were either below NMOCD regulatory standards or not detected above laboratory method detection limits on the 110 soil samples. Laboratory results indicated that TPH-GRO/DRO concentrations were not detected above the detection limit of 20 mg/kg in any of the samples.

5.1 Distribution of Hydrocarbons in the Unsaturated Zone

The area of soils remediated was approximately 35,000 square feet. The vertical extent of soils impacted above the site specific NMOCD cleanup guidelines was determined to be limited to the asphaltines at the surface or to less than 2 feet bgs where the material was covered by windblown sand. 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 previous investigation borings or observed during later site remediation activities. Monitor wells installed at a nearby release site have recorded water levels of approximately 50 feet bgs. Therefore, there is no indication that hydrocarbons from the Jalmat #2 historical release have impacted the saturated zone.

6.0 Site Remediation

The final surface area remediated was approximately 35,000 square feet. The volume of excavated soils transported to the central land farm totaled 660 cubic yards. Areas with observed asphaltines and where laboratory analytical results indicated that surface impacts did not extend below 2 feet bgs were addressed under the Work Plan Scenario 1. Surface asphaltines and underlying soils were scraped to a depth of up to 2 ft bgs and the underlying soils blended in place. In areas where the asphaltines had become covered with windblown sand, the sand was blended with excavated soils, transported to the central land farm, stockpiled and sampled. The remediated area is shown in Figure 2.

After removal of the asphaltines in accordance with the site-specific work plan, the area was backfilled with clean soils obtained from the landowner, contoured to the original grade surrounding the site, and reseeded with approved grass seed.

7.0 Confirmation Sampling and Comparison to Remediation Guideline Standards

Soils visually impacted with asphaltines were excavated and stockpiled adjacent to the site. Asphaltine impacted soils were predominantly located approximately 1.5 ft below windblown sand that had covered the release area. The asphaltine impacted soils and overburden sand was excavated and transported to the central land farm. The underlying soils were blended and checked with a PID. PID readings ranged from 0.0 to 0.7 parts per million (ppm), indicating the cleanup of the asphaltine impacted area under Scenario 1 was complete.

The asphaltine impacted soils stockpiled at the land farm were sampled and 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. Analytical results indicate that the soils treated at the land farm were below the NMOCD cleanup guidelines. The stockpiled soils were further blended and used for backfill over liners at other sites.

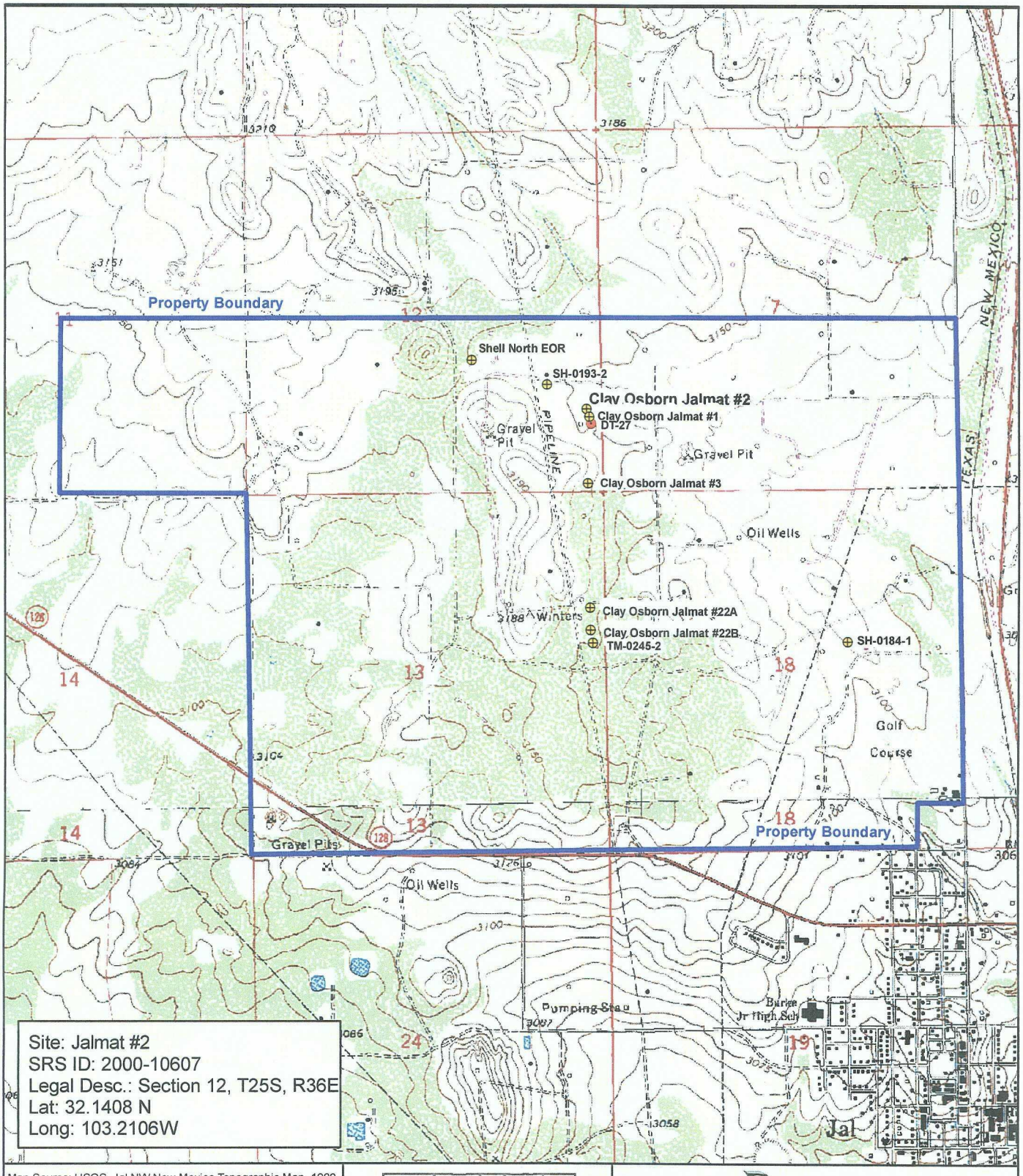
8.0 Conclusion

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 Jalmat #2 release site located on the Clay Osborn Rocky Top Ranch. The site is located in the SE ¼ of the SE ¼ of Section 12, Township 25 South, Range 36 East, approximately 1 mile northwest of Jal at Latitude 32°08′27″ North, and Longitude 103°12′38″ West.

The hydrocarbon impacted area was the result of a historical release. The date of the release as well as the volume of crude released and recovered is not known. Initial site investigation samples indicate that soils beneath visible asphaltines were below the NMOCD cleanup guidelines. Site remediation guidelines were established in a Site-Specific Remediation Work Plan dated April 2006 and involved removal of visible asphaltines and in-place blending of underlying soils. Site activities were conducted in October 2006 and final grading and seeding was completed in March 2007.

Impacted soils were removed per the NMOCD approved Site-Specific Work Plan. After removal of the asphaltines, the area was backfilled with clean soils obtained from the landowner, 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.

Appendix A
Figures

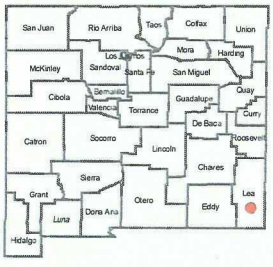


Map Source: USGS, Jal NW New Mexico Topographic Map, 1980.

0 1,000 2,000

Feet

N



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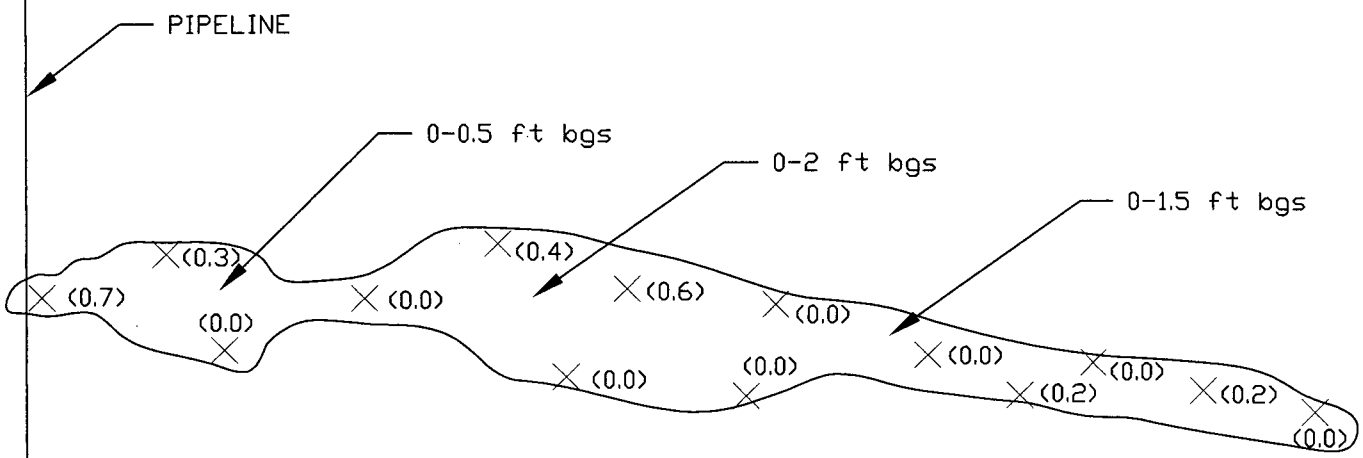
Jalmat #2
SRS ID: 2000-10607
Plains Marketing L.P.
Lea County, New Mexico

Figure 1: Site Location Map



N

0 100 200

Feet

LEGEND:

——— Final Excavation Boundary

×(0.2) PID Readings, ppm

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Rocky Top Ranch
Clay Osborn Jalmat #2
Lea County, New Mexico

Figure 2: Excavation Areas

Appendix B
Site Photographs

JALMAT 2 Photo taken Facing east from the Plains pipeline ROW

10-12-06

JALMAT 2 Photo from same location as above following surface scraping.

NOTE: Orange flag indicates a small area of deeper impacts near pipeline. (PID = 0.7)

10-12-06

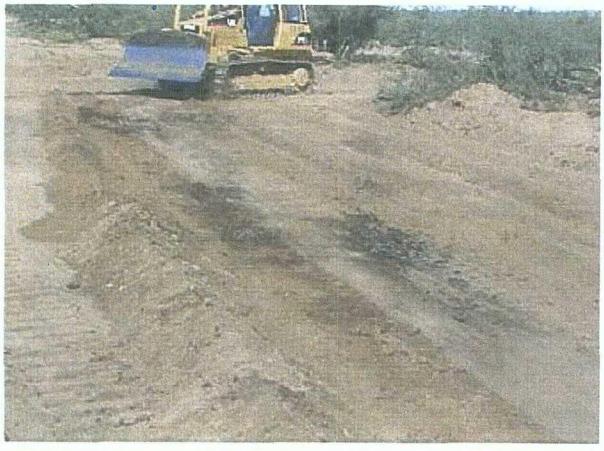
JALMAT 2 Photo from same locations as above following blending of soils to 2 ft bgs.

10-12-06

JALMAT 2

Photo taken facing west. This area is located approx 200 ft from the Plains pipeline and exhibited a thin layer of asphaltines and impacted sandstone at 1 to 2 ft bgs.

10-13-06



JALMAT 2

Photo taken facing west. This area is located approx. 200 ft from the Plains pipeline and exhibited a thin layer of asphaltines and impacted sandstone at 1 ft bgs.

10-13-06

JALMAT 2

Photo taken facing west. Both areas described above are represented in this photo indicating a divergent spill path in this area.

10-13-06

JALMAT 2 Scrape completed.
Photo taken facing east. 10-17-06