1R - 455

# Annual GW Mon. REPORTS

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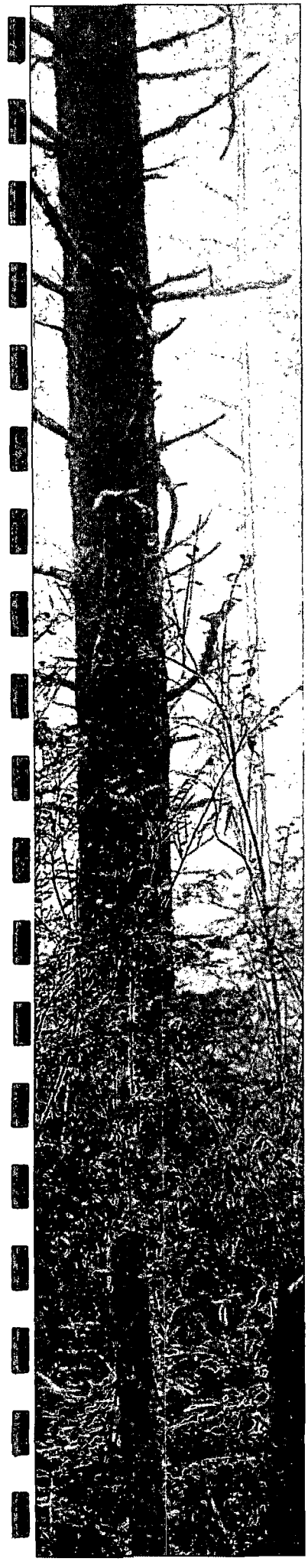
2009



# 2009 ANNUAL REPORT
# VACUUM TO JAL 14" MAINLINE #3
## PLAINS SRS NO.: 2003-00117

## UL-A, SECTION 35, T21S, R37E

## Lea County, New Mexico
### NMOCD No.: 1R – 455

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**March 2010**


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March 30, 2010



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

Re: 2009 Annual Reports for
Vacuum to Jal 14" Mainline #3
Vacuum to Jal 14" Mainline #5
D S Hugh
Hugh Gathering

Dear Mr. Hansen:

Please find enclosed one copy each of the 2009 Annual Report required to be submitted to the New Mexico Oil Conservation Division (NMOCD). Annual Reports for the year 2009 were prepared by Premier Environmental Services, Inc. (Premier) on behalf of Plains Pipeline, L.P. (Plains) for the following Plains' sites located in Lea County, New Mexico:

- Vacuum to Jal 14" Mainline #3; NMOCD # 1R - 455; Plains SRS # 2003 - 00117
- Vacuum to Jal 14" Mainline #5; NMOCD # 1R - 0464; Plains SRS # 2003 - 00134
- D S Hugh; NMOCD # 1R - 0463; Plains SRS # 2000 - 10807
- Hugh Gathering; NMOCD # AP-0041; Plains SRS # 2002 - 10235

If you have any questions or concerns, please feel free to call us at (281) 240-5200 extension 2703.

Yours very truly,

Chan Patel
Senior Project Manager

Steven M Sellepack
Project Geologist

cc: Larry Johnson (NMOCD Hobbs)
Mr. Jeffrey Dann, P.G. (Plains)
Local Plains Representative
Premier Environmental Services

Attachments

2009 Annual Report - Vacuum to Jal 14" Mainline #3
2009 Annual Report - Vacuum to Jal 14" Mainline #5
2009 Annual Report - D S Hugh
2009 Annual Report - Hugh Gathering

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## ***DISCLAIMER***

*Premier has examined and relied upon the file information provided by Plains and Environmental Plus, Inc. (EPI). Premier has not conducted an independent examination of the information contained in the Plains files; furthermore, we assume the genuineness of the documents reviewed and that the information provided in these documents to be true and accurate. Premier has prepared this report using the level of care and professionalism in the industry for similar projects under similar conditions. Premier will not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time this report was prepared. Premier believes the conclusions stated herein are factual, but no guarantee is made or implied.*

## EXECUTIVE SUMMARY

On May 8, 2003, a 14-inch steel pipeline at the EOTT Energy LLC (EOTT) Vacuum to Jal 14" Mainline # 3 Site (Vac to Jal #3, Site), SRS No. 2003-00117 released approximately three barrels of crude oil into the subsurface. The pipeline is currently owned by Plains Pipeline, L.P. (Plains). The site is located in unit letter A, NE¼ of the NE¼, Section 35, Township 21S, Range 37E, or more specifically at latitude 32°26'32.67" N and longitude 103°07'36.885" W in Lea County, New Mexico (**Figure 1, Appendix A**). The release was apparently caused by internal corrosion and the pipeline was repaired (a copy of the NMOCD Release Notification Form **C-141** is included in **Appendix D**).

The irregularly-shaped spill-impacted area was approximately 566 square feet, according to Mr. Pat McCasland with Environmental Plus, Inc. (EPI). As part of the initial remediation activities, affected soil was removed and stockpiled on site in June 2003. A total of 676 cubic yards of stockpiled soil was then transported to the Lea Station Land Farm for treatment, as reported on the NMOCD Form C-138 in April 2004 by EPI.

Investigation of the hydrocarbon release in soil and groundwater continued through 2005 and details of this investigation are presented in a March 2006 *Site Investigation and Annual Report.* This report was prepared by Premier Environmental Services (Premier) on behalf of Plains, and was submitted to the New Mexico Oil Conservation Division (NMOCD).

In May 2006, a *Soil Remediation Plan* was submitted to the NMOCD to address soil contamination at the site. Objectives of this risk-based *Soil Remediation Plan* were to isolate and control chemicals of concern (COCs) in the soil and to prevent further impact to groundwater. The *Soil Remediation Plan* was approved by the NMOCD in a correspondence dated June 1, 2006 to Plains. A *Soil Closure Report*, which details the excavation, impermeable liner installation and other activities completed to meet the objectives identified in the *Soil Remediation Plan* and the specific conditions identified in the NMOCD approval letter, was submitted to the NMOCD in March 2007.

During 2009, groundwater remediation was conducted on a weekly basis through phase separated hydrocarbons (PSH) recovery while monitoring of groundwater was conducted quarterly.

Monthly gauging data of the monitor wells indicated a relatively flat groundwater gradient with no significant fluctuations during 2009. The groundwater flow, based

on the gauging data collected during 2009, was trending southeast at an approximate average gradient of 0.0041 feet/foot across the site based on the groundwater elevations measured between monitor wells MW-4 and MW-7 during the quarterly groundwater sampling events. The groundwater gradient and flow direction across the site during 2009 were similar to the gradient direction observed during the previous four years.

This report summarizes the weekly groundwater gauging activities and the quarterly groundwater monitoring activities that took place during 2009.

During 2009, measurable PSH was observed in monitor well MW-1 and recovery wells RW-1, RW-2, and RW-3. The variations in PSH thickness and the trends are discussed further in **Section 2.4** of this report.

The dissolved phase plume was evaluated by analyzing groundwater samples collected quarterly from six monitor wells which did not contain PSH. Throughout 2009, benzene was detected in monitor wells MW-2 and MW-3 located down-gradient and cross gradient respectively from the excavated soil area (**Figure 2, Appendix A**). Benzene concentrations in groundwater samples collected from the monitor wells MW-2 and MW-3 appear to be decreasing; however, more data is needed to validate this trend. The groundwater samples collected from the remaining wells on site reported the benzene, toluene, ethylbenzene and total xylenes (BTEX) constituent concentrations either below the NMOCD remediation criteria or below the laboratory reporting limits (RLs).

During the second quarter of 2009, groundwater samples from wells with PSH or hydrocarbon sheen (monitor well MW-1 and recovery wells RW-1, RW-2 and RW-3) were collected and analyzed for BTEX constituents, Polynuclear aromatic hydrocarbons (PAHs) and total petroleum hydrocarbons (TPH).

In the groundwater sample collected from monitor well MW-1 during the second quarter of 2009, only benzene and total xylenes were reported above their respective NMOCD remediation criterion. Only benzene concentrations were reported higher than the NMOCD remediation criterion from the recovery wells RW-1, RW-2 and RW-3. Although reported above the laboratory reporting limits, the remaining BTEX constituents were reported below the NMOCD remediation criteria.

Total naphthalene (naphthalene and monomethylnaphthalenes) were reported at concentrations above the New Mexico Water Quality Control Commission (WQCC) groundwater standards in the groundwater sample collected from monitor well MW-1 and recovery wells RW-1 and RW-2.

Plume stability analysis was completed for the data obtained from the years 2008 and 2009 to establish baseline benzene plume characteristics. Comparison between the 2008 and 2009 plume characteristics indicate that there is a decreasing trend observed. The calculated benzene plume mass for 2009 indicated a 27 percent decrease compared to the plume mass calculated for 2008. However, no assertive trend analysis could be done at this time as only two sampling events including all the wells at the site have been completed to date. Additional sampling events will be necessary to establish trends. Further details and the findings of the plume stability study are presented in **Section 2.10, Figures 5 through 8, Appendix B**.

The benzene concentrations reported in the groundwater collected from the monitor wells downgradient of the plume, MW-2 and MW-3, from 2006 to 2009 also indicate a decreasing benzene concentration. This evaluation is graphically presented in **Figure 9, Appendix B**. Since the wells with PSH at the site are being sampled only from 2008, a plume stability study could not be completed for the years 2006 and 2007.

During 2009, measurable PSH was observed in monitor well MW-1 and recovery wells RW-1, RW-2, and RW-3. PSH was not consistently observed in MW-1 until November 2009 when a thin layer (less than 0.1 foot) began to consistently be measured. The trends in the PSH thickness in the remaining three recovery wells have been observed to be decreasing.

Approximately 108 gallons of PSH and 2,169 gallons of dissolved phase groundwater were recovered during 2009.

The decrease in dissolved phase hydrocarbon concentrations and PSH thicknesses on groundwater is related to excavation of affected surface and shallow subsurface soil, placement of a liner to prevent migration of COC, increased fluid recovery activities via pumping, installation of absorbent socks, and also natural attenuation.

# 1.0 INTRODUCTION AND SITE HISTORY

Premier Environmental Services, Inc. (Premier) has been retained by Plains Pipeline, L.P. (Plains) to complete the PSH Recovery, groundwater monitoring and regulatory reporting at the Vacuum to Jal 14" Mainline #3 Site (site) (SRS No: 2003-00117). The site is located in unit letter A, NE¼ of the NE¼, Section 35 Township 21S, Range 37E, or specifically at latitude 32° 26' 32.67" N and longitude 103° 07' 36.885" W in Lea County, New Mexico (**Figure 1, Appendix A**).

A hydrocarbon leak occurred on May 8, 2003, apparently caused by internal corrosion in a pipeline. The release was below the reportable quantity and was not initially reported to the NMOCD.

The release was first investigated by Environmental Plus, Inc. (EPI) on May 23, 2003, when it was discovered, the volume of crude oil released was estimated to be approximately three barrels. This information was then reported to the NMOCD through the Release Notification Form C-141 (presented in **Appendix D**). In June 2003, affected soil was excavated and stockpiled. In April 2004, 676 cubic yards of stockpiled soil was transported to the Lea Station Land Farm for treatment and was reported on Form C-138.

Premier continued to investigate the hydrocarbon impact on soil and groundwater through 2005. The results of the 2005 soil and groundwater investigations are detailed in a March 2006 *Site Investigation and Annual Report*, which was submitted to the NMOCD on behalf of Plains. During 2006, the affected area was further assessed and groundwater monitoring continued on a quarterly basis.

In May 2006, a *Soil Remediation Plan* was submitted to the NMOCD to address soil impacts at the site. Objectives of this risk-based plan were to isolate and contain COCs in the soil and to prevent further impact to groundwater. The *Soil Remediation Plan* was approved by the NMOCD in a letter to Plains dated June 1, 2006.

In October 2006, excavation of impacted soil was completed in accordance with the *Soil Remediation Plan* to satisfy soil remediation goals and meet regulatory requirements. The excavation footprint and monitor well locations are shown in **Figure 2, Appendix A**.

The base of the excavation was over-excavated to an approximate depth of 5 feet below the bottom of the pipeline, and was graded with a high central area. A 20-mil high-density polyethylene impermeable liner was placed at the base of the excavation, trimmed and then backfilled, and covered with a 6-inch-thick layer of clean imported topsoil. The slope facing away from the center of the excavation facilitates drainage of infiltrated water away from the residual hydrocarbon. Details

of soil remediation activities can be found in the *December 2006 Soil Closure Report*, submitted to the NMOCD.

A quarterly groundwater monitoring program for this site has been implemented starting 2006 and is continued to date. At the request of NMOCD, the wells with measurable PSH or sheen were sampled annually and analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX), total petroleum hydrocarbons (TPH) and polynuclear aromatic hydrocarbons (PAHs) for 2008 and 2009.

# 2.0 2009 ACTIVITIES

## 2.1 Site Cleanup Goals (Groundwater)

Based on standards outlined in New Mexico Administrative Code (NMAC), Title 20, Chapter 6, Part 2, the remediation criteria for groundwater at the site are as follows:

| | |
|---|---|
| Benzene | 0.01 mg/L |
| Toluene, | 0.75 mg/L |
| Ethylbenzene | 0.75 mg/L |
| Total xylenes | 0.62 mg/L |
| Total naphthalenes1, 2 | 0.03 mg/L |
| Benzo-a-pyrene2 | 0.0007 mg/L |

1 – PAHs: Total naphthalenes plus monomethylnaphthalenes
2 – PAH remediation standards will be used as target concentrations only upon PSH removal.

In addition to using the above values as the target cleanup goals for constituents of concern (COC) concentrations in groundwater at the site, PSH removal is also an integral part of on-going remediation activities.

## 2.2 2009 Groundwater Activities

Groundwater at the site was evaluated throughout 2009 by conducting weekly gauging of three recovery wells, seven monitor wells; and quarterly groundwater sampling and analysis from six monitor wells. Groundwater samples were analyzed for BTEX constituents. Three recovery wells RW-1, RW-2, RW-3 and one monitor well MW-1 indicated the presence of measurable PSH thickness or a hydrocarbon sheen during 2009. Starting second quarter of 2008, all recovery wells and monitor well(s) with PSH or sheen were required to be sampled annually and groundwater analyzed for BTEX, PAH and TPH constituents. Groundwater samples were collected from these wells containing PSH and submitted for laboratory analysis during the second quarter of 2009 sampling event.

## 2.3 2009 Groundwater Sampling Activities

During each quarterly groundwater sampling event, prior to purging the wells, depth to PSH and water level measurements were collected from each well using an electric oil/water interface probe. The oil/water interface probe was decontaminated before use in each well to prevent cross-contamination. Prior to collecting groundwater samples from each well, approximately three well volumes of water were purged from each well using dedicated poly vinyl chloride bailers. After purging was completed, groundwater samples were collected using dedicated

disposable bailers. All samples collected during the quarterly groundwater sampling events were collected directly into a laboratory provided containers and placed in a cooler on ice and shipped under Chain of Custody to Trace Analysis, Inc. in Lubbock, Texas for chemical analysis. All purge water was placed into the onsite storage tank used to hold the fluids associated with PSH recovery activities.

The following sections present a brief discussion of the PSH thickness trends and the analytical results reported for each quarter.

## 2.4 2009 Groundwater Gauging activities

Groundwater gauging and PSH recovery activities were completed on a weekly basis using submersible pumps, hand bailer and/or absorbent socks. Fluids recovered were initially stored in 55-gallon drums and later placed into a 1000-gallon storage tank. **Table 1, Appendix B** presents the groundwater gauging data for 2009 and **Table 2** (provided on CD) presents all the groundwater elevation data available historically.

During 2009, measurable PSH was observed in monitor well MW-1 and recovery wells RW-1, RW-2, and RW-3.

The PSH thickness in MW-1 indicated a decreasing trend starting early 2008, remained non-measurable through most of 2009 and a very thin PSH thickness was observed during the last quarter of 2009. During the last quarter of 2009, the PSH thickness ranged between 0.04 ft and 0.09 ft.

The recovery well RW-1 indicated measurable PSH thickness towards the end of 2008 and began a decreasing trend in January 2009. The average PSH thickness gradually decreased from 2.17 ft during the month of January 2009 to 0.7 ft during December 2009.

The PSH thickness in recovery well RW-2 has increased from a hydrocarbon sheen to a measurable thickness, first observed in October 2008. Measurable PSH thickness was observed until June 2009 with a maximum thickness of 1.37 ft observed during the month of April 2009. The PSH thickness is currently on a decreasing trend. The decreasing trend was first observed in June 2009. The average PSH thickness decreased from 0.86 ft in June 2009 to 0.25 ft during the month of December 2009.

The PSH thickness in recovery well RW-3 was found to have a measurable thickness towards the end of year 2009 with an average PSH thickness of 0.07 ft in December 2009.

## 2.5 1st Quarter 2009 – Groundwater Gauging and Monitoring Activities

On February 18, 2009, Premier conducted the first quarter of 2009 groundwater sampling event at the site.

During the February 18, 2009 event, groundwater samples were collected from monitor wells MW-2 through MW-7 and analyzed for BTEX constituents using the United States Environmental Protection Agency (US EPA) Method 8021B. Groundwater samples were not collected from monitor well MW-1 and recovery wells RW-1, RW-2 and RW-3 during the February 2009 sampling event, due to the presence of PSH.

Analytical results for the groundwater samples collected at the site on February 18, 2009 reported BTEX constituents above the NMOCD remedial guidelines (**Table 2, Appendix B**) only from monitor well MW-2. Benzene in the groundwater sample collected from monitor well MW-2 was reported at a concentration of 0.117 mg/L, which is above the NMOCD remediation criteria of 0.01 mg/L. The groundwater sample collected from monitor well MW-3 reported concentrations of benzene and toluene above the laboratory reporting limits (RLs), but below the NMOCD remediation criteria. BTEX constituents from the remaining wells were all below the laboratory RLs (see **Table 2 in Appendix B and Figure 4-A in Appendix A**). A copy of the laboratory analytical data package is included in **Appendix C**.

The depth to water level measurements collected from wells MW-4 and MW-6 at the site during the February 2009 sampling event indicated that corrected groundwater elevations were 3320.12 feet and 3320.56 feet, respectively. The water level data collected on February 18, 2009 indicates a groundwater flow towards east-southeast across the site with an approximate gradient of 0.0035 feet/foot between monitor wells MW-4 and MW-6 (see **Figure 3-A in Appendix A**). This groundwater flow direction places monitor well MW-2 and MW-4 down gradient from the source area.

In addition to collecting groundwater samples during the first quarter of 2009, Premier performed weekly visits to the site to gauge and recover PSH from the four wells with PSH/sheen (wells MW-1, RW-1, RW-2 and RW-3). During each site visit, the wells were gauged for PSH and water level measurements to recover measurable PSH (see **Table 1 in Appendix B**). Periodically, absorbent socks were used in two wells (MW-1 and RW-3). During PSH recovery activities, typically, 1 to 2 gallons of PSH and 10 to 20 gallons of groundwater with dissolved phase hydrocarbons were removed from each well. All fluids removed from the recovery wells at the site were initially placed into labeled 55-gallon drums and later transferred into an onsite storage tank.

During the first quarter of 2009, a total of approximately 44 gallons of PSH and 593 gallons of groundwater with dissolved phase hydrocarbons were recovered from all of the four wells with PSH or hydrocarbons sheen on site. The individual well gauging data and the recovery volumes during each weekly site visit for 2009 are summarized in **Table 1, Appendix B**. A summary of the total fluids recovered each month from all of the wells is presented in **Table 5, Appendix B**.

## 2.6 2nd Quarter 2009 – Groundwater Gauging and Monitoring Activities

The second quarter of 2009 groundwater sampling activities was conducted on May 20, 2009. This included the collection of groundwater samples from monitor wells MW-2 through MW-7. Analytical results for groundwater samples collected during the May 2009 sampling event indicated that only benzene concentration reported in the groundwater sample collected from monitor wells MW-2 and MW-3 are at concentrations above the NMOCD remediation criteria (**Table 2, Appendix B**).

The samples from monitor wells MW-2 and MW-3 reported benzene concentrations of 0.0357 mg/L and 0.166 mg/L, respectively, which are above the NMOCD regulatory limit of 0.01 mg/L. Benzene was not detected in groundwater samples collected from other monitor wells. Toluene was detected in monitor well MW-3 at a concentration of 0.182 mg/L and was below the NMOCD remediation criteria. Toluene was not detected in any of the other remaining monitor wells MW-2 through MW-7.

Groundwater samples collected from monitor wells MW-2 and MW-3 reported ethylbenzene concentrations of 0.0005 'J' mg/L (estimated concentration) and 0.105 mg/L, respectively. Samples from monitor wells MW-3 and MW-6 indicated the presence of total xylenes at concentration of 0.212 mg/L and 0.0002 'J' mg/L. All remaining constituents in samples from monitor wells MW-2 through MW-7 were below the laboratory RLs during the second quarter of 2009 sampling event (see **Figure 4-B, Appendix A**).

In 2008 and 2009, NMOCD required Plains to analyze for BTEX, TPH and PAH constituents in the dissolved phase groundwater in wells with hydrocarbon sheen. To meet this requirement, groundwater samples were also collected from monitor well MW-1, and recovery wells RW-1, RW-2 and RW-3, during the second quarter of 2009 and were analyzed for BTEX, TPH and PAH constituents (see **Tables 3 and 4, Appendix B** for the analytical data).

During this sampling event, fluids (PSH and dissolved phase hydrocarbons) from the wells MW-1, RW-1, RW-2 and RW-3 were recovered prior to purging the well to collect the groundwater samples. The analytical results indicated the presence of

benzene above the NMOCD remediation criteria of 0.01 mg/L in all of these wells (monitor well MW-1, and recovery well RW-1, RW-2 and RW-3). The remaining BTEX constituents, toluene, ethylbenzene and total xylenes were reported below the NMOCD remediation criteria of 0.75 mg/L, 0.75 mg/L and 0.62 mg/L respectively.

Groundwater samples from monitor well MW-1 and recovery wells RW-1, RW-2 and RW-3 were also analyzed for TPH and PAH constituents during this sampling event. The PAH analyses of the dissolved phase hydrocarbons in samples from wells with PSH or hydrocarbon sheen was evaluated for screening purposes only. PAH concentrations will be evaluated from a compliance standpoint only after the permanent removal of PSH and when BTEX constituent concentrations in the dissolved phase plume indicate a stable or reducing dissolved phase hydrocarbon plume.

As part of the evaluation process, PAH constituents detected (associated with crude oil) are evaluated against the New Mexico WQCC groundwater standards for PAHs. The PAH constituent concentrations detected in the groundwater sample collected from monitor well MW-1 and recovery wells RW-1 and RW-2 were reported above the New Mexico WQCC Standards for PAHs, of 0.03 mg/L (see **Table 4, Appendix B**).

The other PAH constituents detected such as flourene, phenanthrene, dibenzofuran and 1-methylnaphthalene were all below the below the New Mexico Environmental Department (NMED), Tap Water Soil screening levels for residential scenarios. Groundwater samples from the wells with PSH or sheen will be collected and analyzed for PAH constituents in 2010.

The groundwater samples from the wells with PSH/hydrocarbon sheen were also analyzed for two individual TPH carbon fraction ranges, specifically $C_6$-$C_{10}$ and $C_{10}$-$C_{28}$. The TPH individual fraction concentrations were reported above the laboratory RLs in all of the groundwater samples collected from the wells MW-1, RW-1, and RW-2. Groundwater sample collected from recovery well RW-3 reported only an estimated concentration of the individual TPH fraction $C_6$-$C_{10}$. The $C_{10}$-$C_{28}$ TPH fraction was reported below the laboratory method detection limits.

PSH gauging and purging activities were conducted at the site on a weekly basis during the second quarter of 2009 (**Table 2 in Appendix B**). The depth to water level measurements collected from all wells at the site during the May 2009 sampling event were used to construct the groundwater gradient map included as **Figure 3-B, Appendix A**. The water level data collected on May 20, 2009, presented in **Table 1, Appendix B**, indicates a southeast groundwater flow across

the site with an approximate gradient of 0.0040 feet/foot as measured between monitor wells MW-4 and MW-6.

During the second quarter of 2009, approximately 32 gallons of PSH and 521 gallons of groundwater with dissolved phase hydrocarbons were recovered from all of the four wells on site. The individual well gauging data and the recovery volumes during each weekly site visit for 2009 are presented in **Table 1, Appendix B**. A summary of the total fluids recovered each month from all of the wells is presented in **Table 5, Appendix B**.

## 2.7 3rd Quarter 2009 – Groundwater Gauging and Monitoring Activities

The third quarter of 2009 groundwater sampling activities were conducted on August 27, 2009 and included the collection of groundwater samples from monitor wells MW-2 through MW-7.

Analytical results for groundwater samples collected during the August 2009 sampling event indicate that benzene concentrations reported in the groundwater sample collected from monitor well MW-2 was at concentration of 0.0172 mg/L, which is above the NMOCD remediation criteria of 0.01 mg/L (**Table 2, Appendix B**). Ethylbenzene was also reported at concentrations above the laboratory RL in the groundwater sample collected from monitor well MW-2.

The analytical results from the groundwater samples collected from the monitor well MW-3 reported all of the BTEX constituents above the laboratory RL but were below the NMOCD remediation limits.

All remaining groundwater samples collected from monitor wells MW-4 through MW-7 reported BTEX concentrations below the laboratory RLs (see **Figure 4-C in Appendix A**).

Due to the presence of PSH in monitor well MW-1, and recovery wells RW-1, RW-2 and RW-3, groundwater samples were not collected from these wells during this groundwater sampling event.

The depth to water level measurements collected from all the wells at the Site during the August 2009 groundwater sampling event were used to construct the groundwater gradient map included as **Figure 3-C, Appendix A**. The water level data collected on August 20, 2009 indicates a southeast groundwater flow across the site with an approximate gradient of 0.0046 feet/foot as measured between monitor wells MW-4 and MW-6. PSH gauging and recovery activities continued at the site on a weekly basis during the third quarter of 2009.

During the third quarter of 2009, approximately 23 gallons of PSH and 403 gallons of groundwater with dissolved phase hydrocarbons were recovered from all of the four wells on site. The individual well gauging data and the recovery volumes during each weekly site visit for 2009 are summarized in **Table 1, Appendix B**. A summary of the total fluids recovered each month from all of the wells is presented in **Table 5, Appendix B**.

## 2.8 4th Quarter – Groundwater Gauging and Monitoring Activities

The fourth quarter of 2009 groundwater sampling activities were conducted on November 18, 2009 and included the collection of groundwater samples from monitor wells MW-2 through MW-7.

Analytical results for groundwater samples collected during the November 2009 sampling event reported benzene concentration in the groundwater sample collected from monitor well MW-2 at concentration of 0.0007 'J' mg/L (estimated concentration) which is below the NMOCD remediation criteria of 0.01 mg/L. None of the other BTEX constituents were reported above the laboratory RL in the groundwater sample collected from monitor well MW-2.

In the groundwater sample collected from monitor well MW-3, all BTEX constituents were detected above the laboratory RLs but were below the NMOCD Remediation criteria.

The groundwater samples collected from the remaining monitor wells on site reported all BTEX constituents below the laboratory RLs (**Table 2, Appendix B**).

Due to the presence of PSH in wells MW-1, RW-1, RW-2 and RW-3, groundwater samples were not collected from these wells during this sampling event (see **Figure 4-D in Appendix A**).

The depth to water level measurements collected from all wells at the site during the November 2009 sampling event were used to construct the groundwater gradient map included in **Figure 3-D, Appendix A**. The water level data collected on November 18, 2009 indicates a southeast groundwater flow across the site with an approximate gradient of 0.0045 feet/foot as measured between monitor wells MW-4 and MW-6.

During the fourth quarter of 2009, approximately 9 gallons of PSH and 652 gallons of groundwater with dissolved phase hydrocarbons were recovered from all of the four wells on site. The individual well gauging data and the recovery volumes during each weekly site visit for 2009 are summarized in **Table 1, Appendix B**. A summary of the total fluids recovered each month from all of the wells is presented in **Table 5, Appendix B**.

## 2.9 PSH Recovered

PSH gauging and removal activities continued at the site in 2009 on a weekly basis. Recovery methods included using electric pumps, hand bailers and absorbent socks to remove PSH observed in wells MW-1, RW-1, RW-2 and RW-3. During 2009, an increased total fluid volume including PSH and dissolved phase hydrocarbons were recovered. This mobilized PSH in the affected area to flow into the recovery wells, thus enabling a greater recovery of total fluids. A 1,000-gallon tank was placed on site to store the recovered fluids. The tank was located in a lined and bermed secondary contained area. Based on 2009 PSH gauging and recovery data, summarized in **Table 1** in **Appendix B**, approximately 2,169 gallons of dissolved phase hydrocarbons and 108 gallons of PSH were recovered from the four wells with PSH and/or hydrocarbon sheen on site. Due to the low volume of PSH recovered using absorbent socks, PSH recovered through absorbent socks could not be quantified. The 1000 gallon tank onsite used for storage of the recovered fluids was emptied during the months of March and October 2009. The volume of PSH recovered on a monthly basis is presented in **Table 5 of Appendix B**.

## 2.10 Plume Stability and Trend Analysis

Understanding plume stability is an important step in the remedial planning process for a site. For instance, an increasing plume could potentially migrate to human or environmental receptors, whereas a stable or decreasing plume may not pose an imminent threat to human health and the environment.

The size of a contaminant plume is influenced by a variety of physical, chemical, and biological processes. Groundwater contaminant plumes are typically limited in size due to a combination of these processes, as well as by other hydrologic and geologic features (streams, clay layers, etc.). When a plume has reached a point of dynamic equilibrium (i.e., steady state), the mass loading to the plume from a source is equal to the rate of the mass lost from the plume by physical, chemical, biological, or in some cases anthropogenic processes. This analysis was conducted in order to understand the overall stability of the benzene plume in terms of its area, average concentration, mass, and center of mass.

The plume stability analysis completed for the site includes the development of benzene concentration isopleth maps for the years 2008 and 2009. An average of the benzene concentrations reported in the four quarterly groundwater sampling events was used for all the wells with no PSH. Since the wells with PSH were sampled only during the second quarter groundwater sampling events in 2008 and 2009, the benzene concentrations reported during this sampling event were used in

plume evaluation. The plume characteristics such as plume area, average concentration, plume mass, and plume centers of mass were calculated for each event using numerical methods and engineering principles.

A summary of the plume characteristics such as the plume mass, plume area and average concentration of benzene in the plume have been calculated and are summarized in **Figure 5, Appendix B.** The plume centers of mass for the two years are presented in **Figure 6, Appendix B**. A slight shift in the plume center of mass in the downgradient groundwater flow direction was observed from 2008 to 2009. The two benzene isopleths maps for 2008 and 2009 are presented in **Figures 7 and 8, Appendix B**, respectively.

The current area affected by the benzene plume, in the case of evaluation of groundwater data from wells with PSH, in 2009 quarterly groundwater sampling events is approximately 16 percent less than that of 2008. The total mass of the benzene plume in 2009 is approximately 94 lbs less than the total mass computed in 2008 which is more than a 26 percent reduction during the one year period. **Table 2.1** below provides a summary of plume characteristics. The center of mass of the plume Figure 6, Appendix B displays a slight shift to the southeast.

**Table 2.1 Summary of Plume Stability Characteristics**

| Date | Area (Acres) | Average Conc. (µg/l) | Mass (lbs) |
|---|---|---|---|
| 2008 | 0.35 | 706 | 355 |
| 2009 | 0.29 | 617 | 261 |

The analytical data collected for the site (**Table 2, Appendix B**) indicates that the benzene plume emanating from the site is decreasing in size and concentration of COCs. The benzene concentrations reported during the quarterly groundwater sampling events from the downgradient wells, monitor wells MW-2 and MW-3 were also evaluated individually. **Figures 9 and 10, Appendix B** present the graphs depicting the benzene concentration over time along with the NMOCD remediation criteria in monitor wells MW-2 and MW-3, respectively. The graph indicates a decreasing trend in the benzene concentration. The benzene concentration reported in the groundwater sample collected from monitor well MW-2 was below the NMOCD remediation criteria during the fourth quarter of 2009. Monitor well MW-3 reported benzene concentration below the NMOCD remediation criteria during both the third and fourth quarterly groundwater sampling events in 2009.

The plume characteristic data coupled with the analytical and gauging data indicate that the plume is decreasing in size. The plume area average concentration and

mass display a decrease from 2008 to 2009. The plume center however has shifted slightly to the southeast. Additionally as RW-2 and RW-3 now contain PSH, there is a possibility that the PSH plume is moving. However, analytical data indicate a decrease in benzene concentrations. PSH thicknesses appear to be decreasing indicating a decrease in the mass and extent of the source. However, when one compares the groundwater elevation at the site to the PSH thickness in RW-1, it is observed that groundwater elevation fluctuations could have an impact on the PSH thickness observed. This is displayed graphically on **Figure 11**, **Appendix B**. Further monitoring will be required to determine if these conditions are persistent and are not a function of some other factor such as groundwater elevation fluctuation.

# 3.0 CONCLUSIONS

During 2009, groundwater monitoring was conducted on a quarterly basis and PSH recovery was continued through manual bailing, use of electric pumps, and with absorbent socks.

Measurable PSH and/or hydrocarbon sheens were observed in recovery wells RW-1, RW-2, and RW-3, and monitor well MW-1 during 2008. Approximately 108 gallons of free phase PSH and 2,169 gallons of groundwater with dissolved phase hydrocarbons were recovered from three recovery wells (RW-1, RW-2 and RW-3) and one monitoring well (MW-1).

Only two of the six monitor wells (MW-2 and MW-3) sampled every quarter indicated detected concentrations of benzene. The analytical results reported for samples from monitor well MW-2 indicated a decreasing benzene concentration trend over the previous four quarterly groundwater monitoring events. The benzene concentration reported in the groundwater sample collected from monitor wells MW-2 during the fourth quarter of 2009 was found to be below the NMOCD remediation criteria, and reported at estimated concentrations.

Analytical results from monitor well MW-3 also indicate a decreasing benzene concentration with an exception of the results from second quarter of 2009 groundwater sampling event. Analytical results from the groundwater sample collected from monitor well MW-3 during the third and fourth quarters of 2009 reported benzene concentration in the same order of magnitude as that of the first quarter of 2009, in which case the second quarter of 2009 results could be considered an anomaly. A general decreasing trend in the benzene concentration has been observed in the two wells with dissolved phase benzene.

As anticipated, benzene concentrations reported in the groundwater sample collected from wells with PSH or hydrocarbons sheen, monitor well MW-1 and recovery wells RW-1, RW-2 and RW-3, during the second quarter of 2009 were above the NMOCD remediation criteria. The benzene concentration reported in the groundwater sample collected from monitor well MW-1 and recovery wells RW-1 and RW-3 were all lower than those reported during the second quarter of 2008 groundwater sampling event. An increase in the benzene concentration reported in the groundwater sample collected from recovery well RW-2 was observed during the second quarter of 2009 sampling event when compared to the second quarter of 2008 groundwater sampling event.

A plume stability analysis was conducted to establish baseline benzene plume characteristics using the 2008 and 2009 benzene data. The initial plume characteristics indicated a decreasing plume area, plume mass and average plume

concentration for benzene. However, no assertive trend analysis could be completed at this time as there are only two sampling events that include all the wells at the site. Additional sampling events will be necessary at this time to establish trends.

During 2009, measurable PSH was observed in monitor well MW-1 and recovery wells RW-1, RW-2, and RW-3. PSH was not consistently observed in MW-1 until November 2009 when a thin layer (less than 0.1 foot) began to consistently be measured. The trends in the PSH thickness in the remaining three recovery wells have been observed to be decreasing.

The reduction in PSH and the decrease in dissolved phase hydrocarbon concentrations is attributable to the removal of affected soils in the surface and shallow subsurface soil, placement of a liner, PSH removal via manual bailing and natural attenuation.

## 4.0 2010 PROPOSED ACTIVITIES

Premier proposes to continue weekly PSH recovery operations through removal of total fluids using manual bailers, electric pumps, and absorbent socks in wells with PSH as necessary, with monthly gauging and quarterly groundwater sampling to monitor hydrocarbons in groundwater. Two additional recovery wells and one monitor well to the east and southeast of the plume were installed during the month of January 2010. Summary of the well installation and associated activities will be presented in the 2010 Annual report.

Plume stability analysis and data evaluation will be completed for the quarterly data obtained during the 2010 sampling events. A statistical trend analysis will be performed using Mann-Kendall Test on the calculated values to assess the benzene plume stability as more data becomes available. A summary of the plume stability study will also be presented in the 2010 Annual Report.

## DISTRIBUTION

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# APPENDIX A

## Figures

Figure 1 – Site Location Map

Figure 2 – Site Map with Monitor and Recovery Wells

Figure 3-A – 1st Quarter 2009 - Groundwater Gradient Map

Figure 3-B – 2nd Quarter 2009 - Groundwater Gradient Map

Figure 3-C – 3rd Quarter 2009 - Groundwater Gradient Map

Figure 3-D – 4th Quarter 2009 - Groundwater Gradient Map

Figure 4-A – 1st Quarter 2009 - BTEX Concentration Map

Figure 4-B(i) – 2nd Quarter 2009 - BTEX Concentration Map

Figure 4-B(ii) – 2nd Quarter 2009 – PAH Concentration Map

Figure 4-C – 3rd Quarter 2009 - BTEX Concentration Map

Figure 4-D – 4th Quarter 2009 - BTEX Concentration Map

Figure 5 – Plume Stability Analysis Summary

Figure 6 – Plume Center of Mass Summary

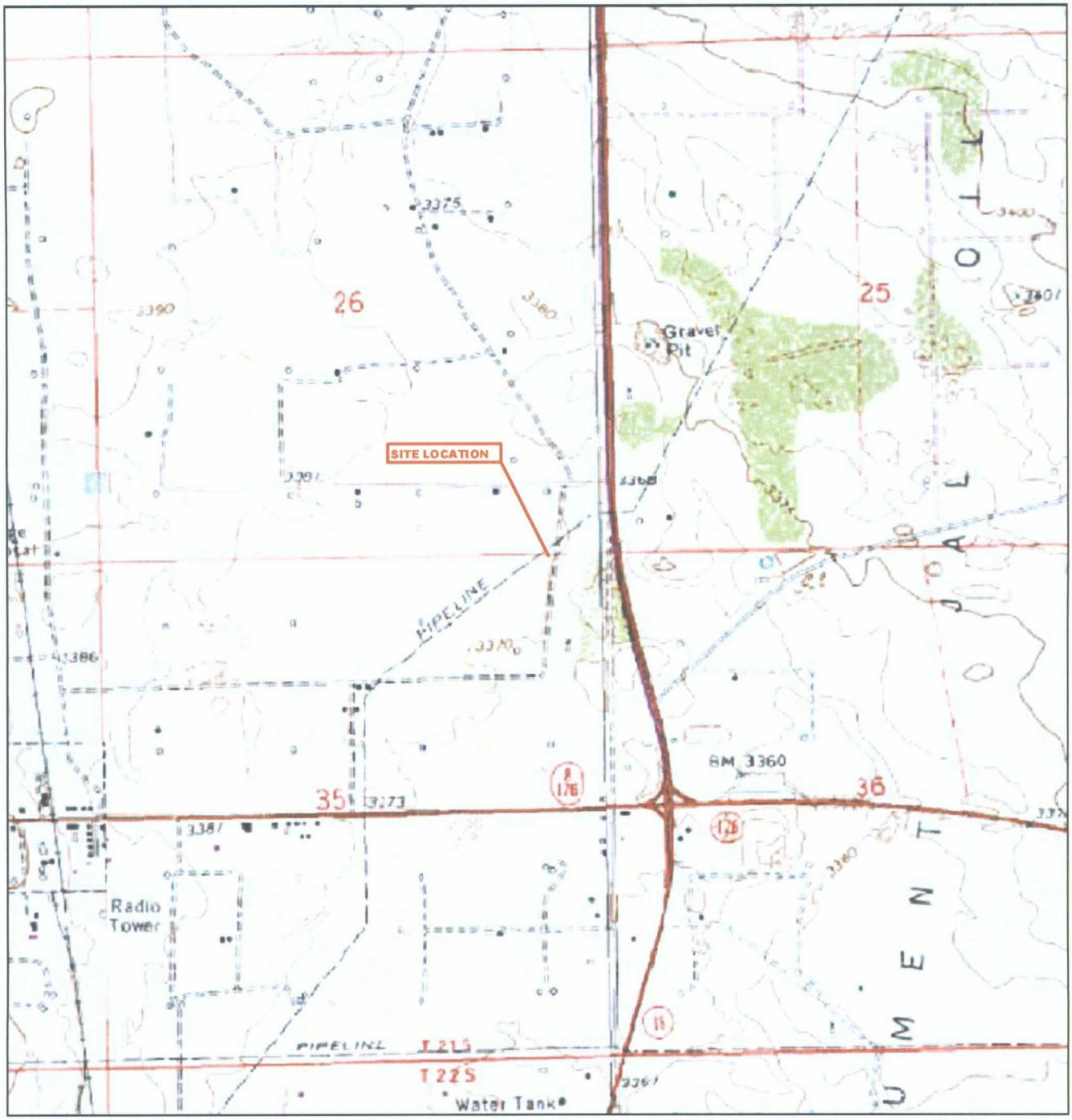
Figure 7 – 2008 Benzene Isopleth Map

Figure 8 – 2009 Benzene Isopleth Map

Figure 9 – Benzene Concentration Trend in Monitor well MW-2

Figure 10 – Benzene Concentration Trend in Monitor well MW-3

Figure 11 – Water Elevation and PSH Thickness Data




**Eunice Quadrangle**
**32°26'32.75"N Latitude & 103°07'37.81"W Longitude**

1/2 1/4 0 1/4 1/2
Distance in Miles

PREMIER ENVIRONMENTAL SERVICES, INC.

Figure 1
Site Location Map
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #3
SRS. No.: 2003-00117
Lea County, New Mexico

| PROJ. NO: 205068.00 | CK: | DATE: 3/09 |
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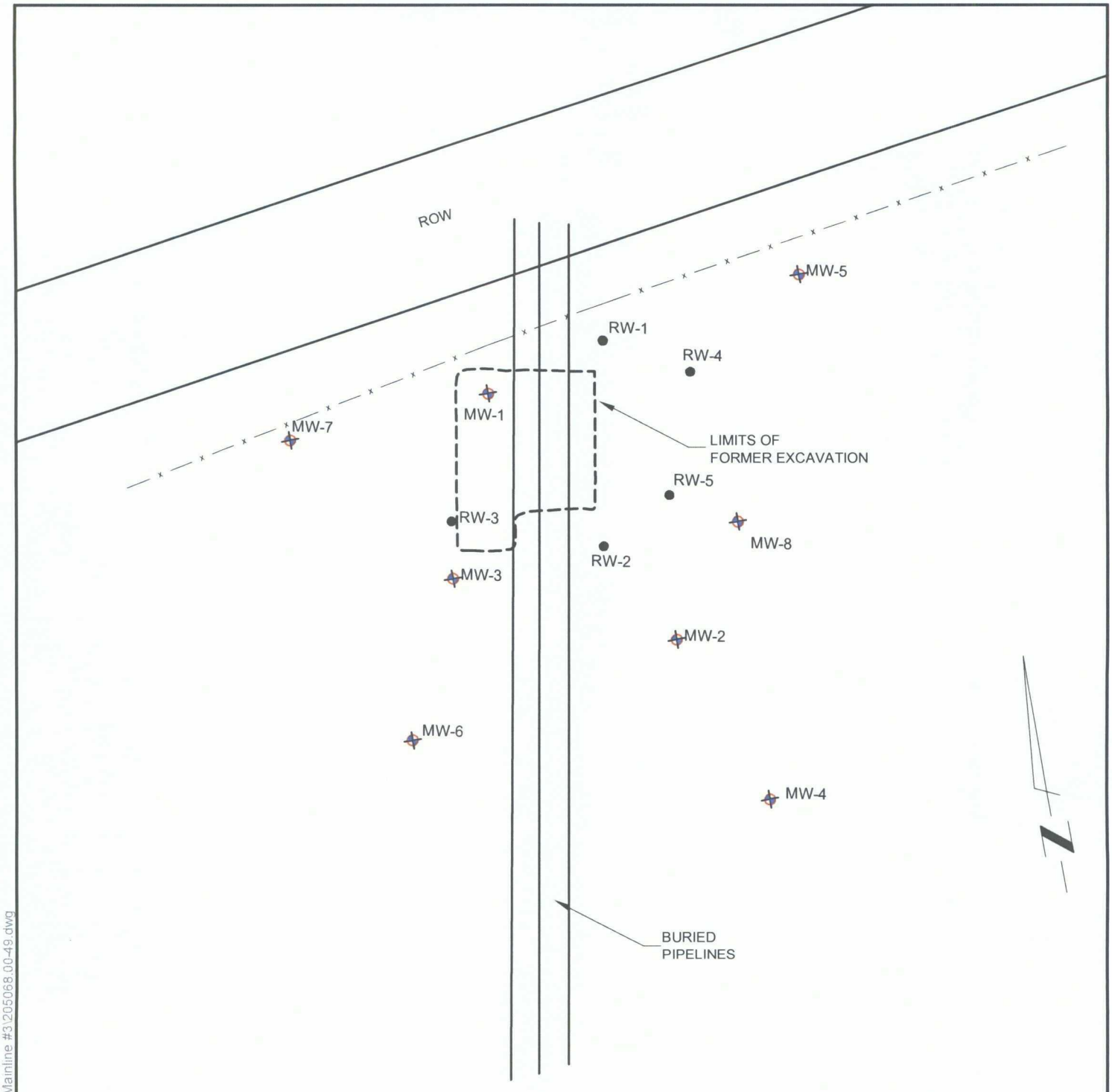


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FEET
APPROXIMATE SCALE

LEGEND:

- RW-1 -RECOVERY WELL LOCATION
- MW-1 -MONITOR WELL LOCATION

PREMIER
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Figure 2
Site Map with Monitor and Recovery Wells
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #3
SRS. No.: 2003-00117
Lea County, New Mexico

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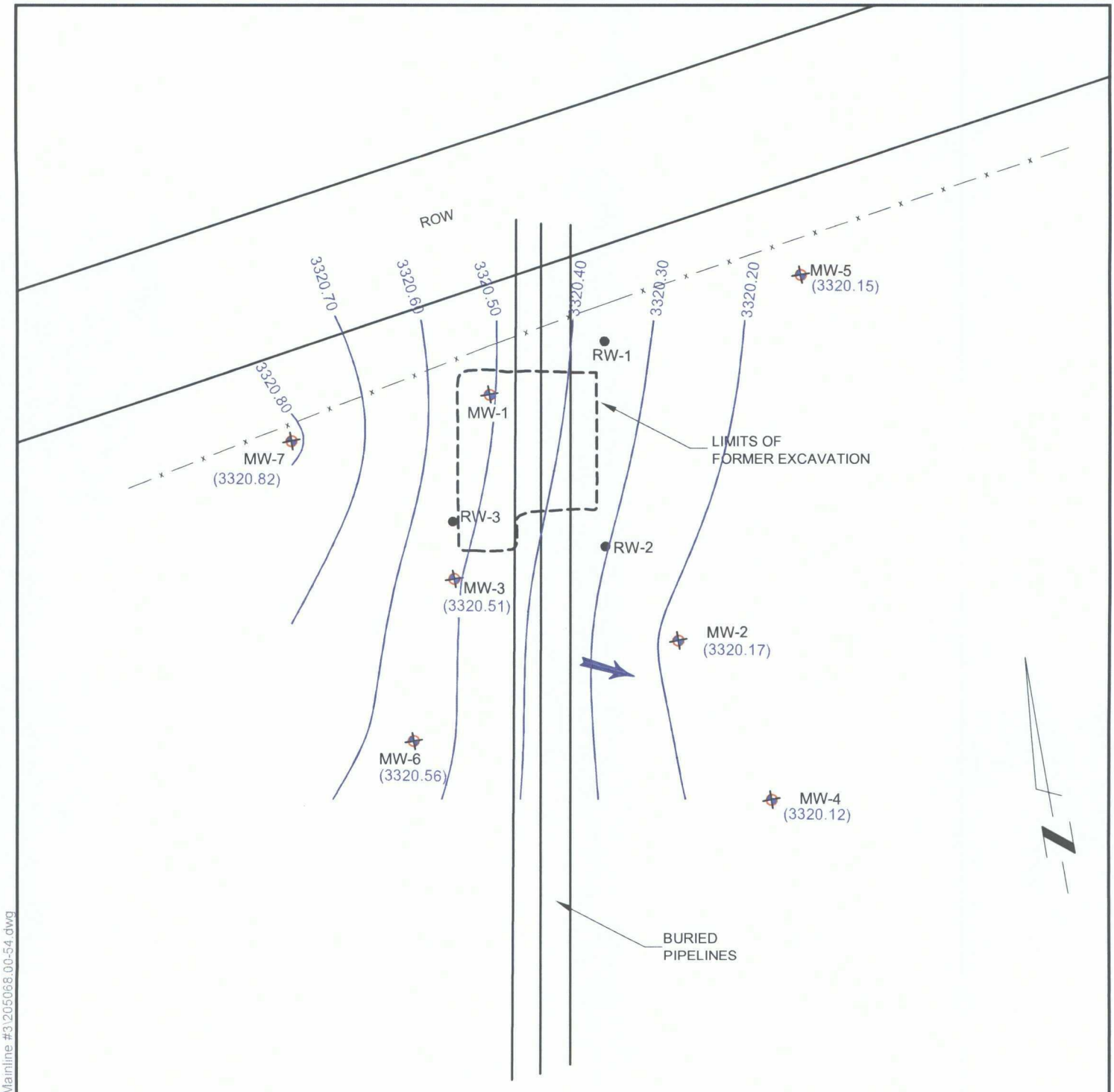


LEGEND:

- RW-1 -RECOVERY WELL LOCATION
- MW-1 -MONITOR WELL LOCATION
- (3121.11) - Corrected Ground Water Elevation, ft.
- 3321.00 - Ground Water Elevation Contour, ft. Contour Interval=0.1 ft.
- Apparent Ground Water Flow Direction

Note: MW-1, RW-1, RW-2 and RW-3 are not used to prepare the contours.

0 50

FEET
APPROXIMATE SCALE

PREMIER
ENVIRONMENTAL SERVICES, INC.

Figure 3A
1st Quarter 2009 - Groundwater Gradient Map
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #3
SRS. No.: 2003-00117
Lea County, New Mexico

| PROJ. NO: 205068.00 | CK: CBP | DATE: 02/10 |
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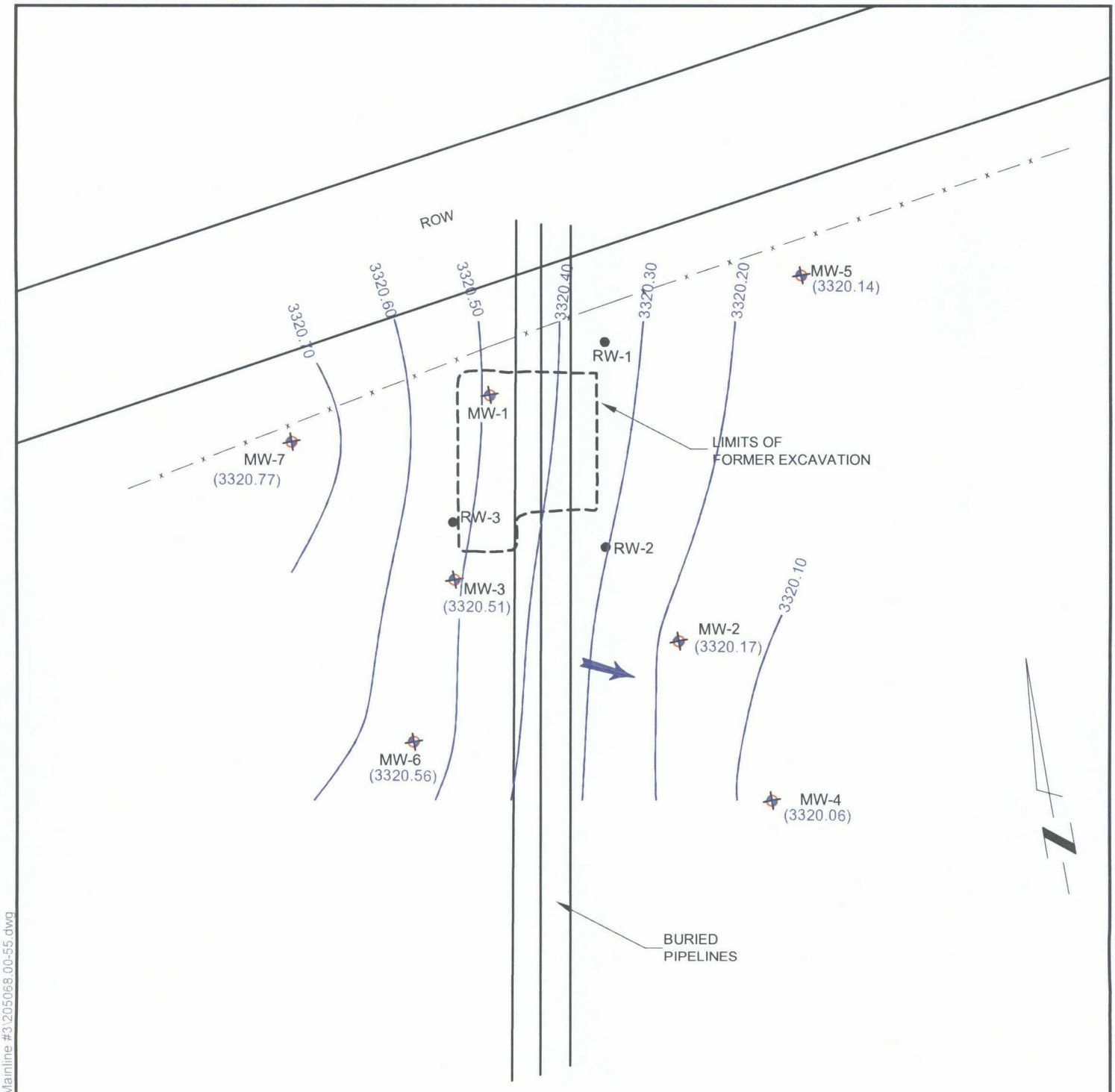


LEGEND:

- RW-1 -RECOVERY WELL LOCATION
- MW-1 -MONITOR WELL LOCATION

(3121.11) - Corrected Ground Water Elevation, ft.

3321.00 - Ground Water Elevation Contour, ft. Contour Interval=0.1 ft.

- Apparent Ground Water Flow Direction

Note: MW-1, RW-1, RW-2 and RW-3 are not used to prepare the contours.

0 50

FEET

APPROXIMATE SCALE

PREMIER

ENVIRONMENTAL SERVICES, INC.

Figure 3B
2nd Quarter 2009 - Groundwater Gradient Map
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #3
SRS. No.: 2003-00117
Lea County, New Mexico

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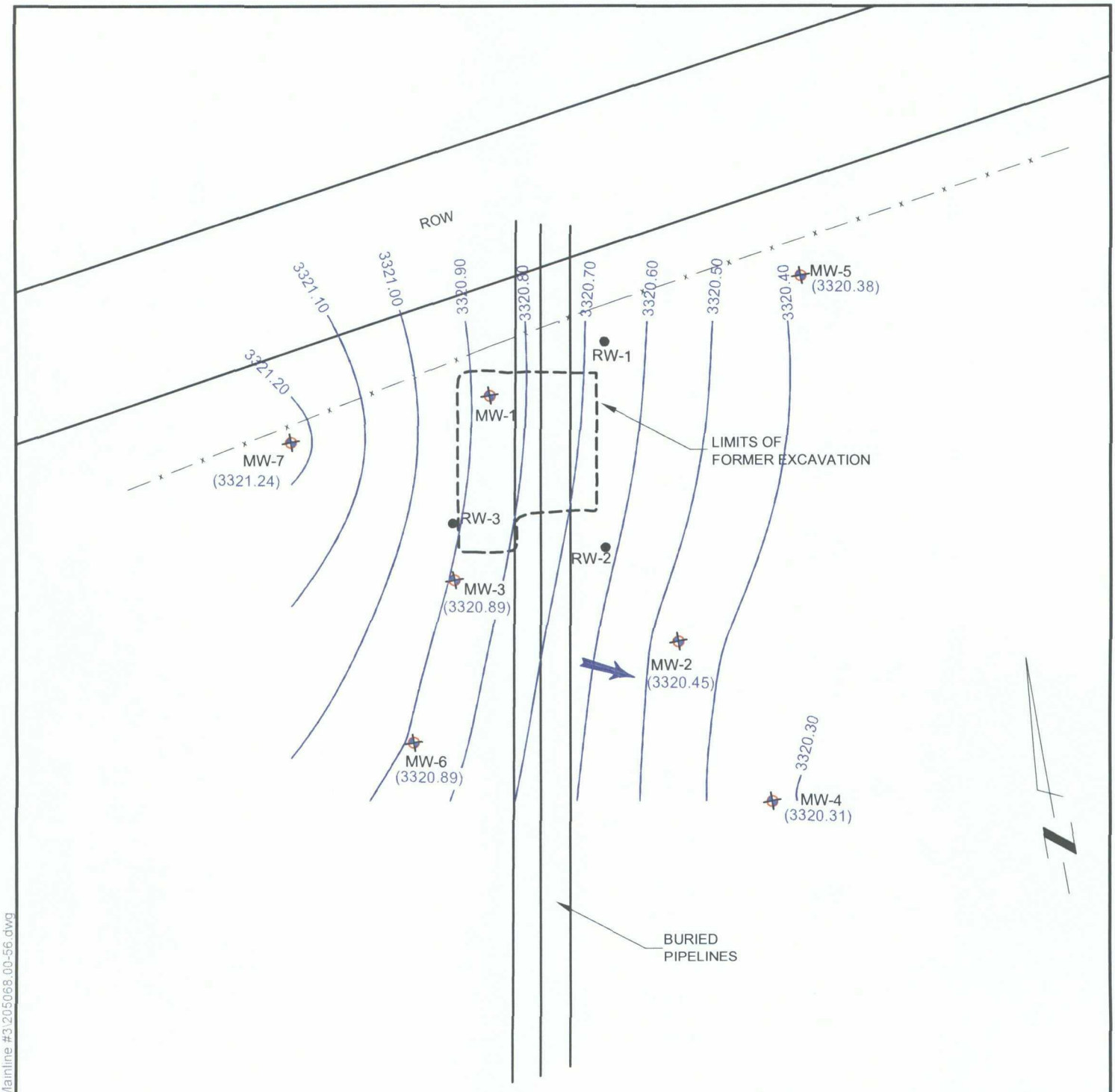


LEGEND:

- RW-1 -RECOVERY WELL LOCATION
- MW-1 -MONITOR WELL LOCATION
- (3121.11) - Corrected Ground Water Elevation, ft.
- 3321.00 - Ground Water Elevation Contour, ft. Contour Interval=0.1 ft.
- Apparent Ground Water Flow Direction

Note: MW-1, RW-1, RW-2 and RW-3 are not used to prepare the contours.

0 50
FEET
APPROXIMATE SCALE

PREMIER
ENVIRONMENTAL SERVICES, INC.

Figure 3C
3rd Quarter 2009 - Groundwater Gradient Map
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #3
SRS. No.: 2003-00117
Lea County, New Mexico

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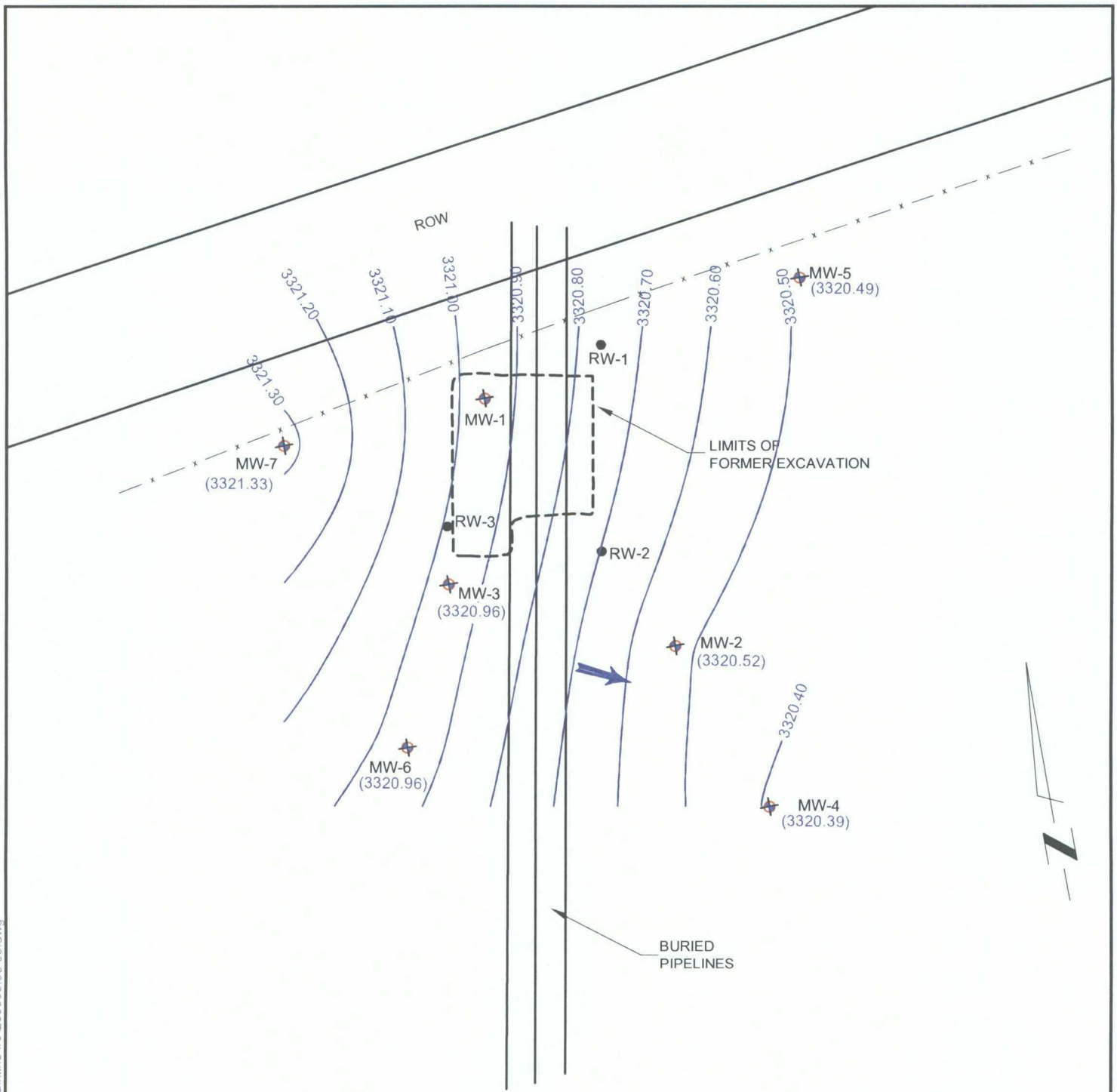


LEGEND:

- RW-1 -RECOVERY WELL LOCATION
- MW-1 -MONITOR WELL LOCATION

(3121.11) - Corrected Ground Water Elevation, ft.

3321.00 - Ground Water Elevation Contour, ft. Contour Interval=0.1 ft.

→ - Apparent Ground Water Flow Direction

Note: MW-1, RW-1, RW-2 and RW-3 are not used to prepare the contours.

0 50

FEET

APPROXIMATE SCALE

PREMIER ENVIRONMENTAL SERVICES, INC.

Figure 3D
4th Quarter 2009 - Groundwater Gradient Map
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #3
SRS. No.: 2003-00117
Lea County, New Mexico

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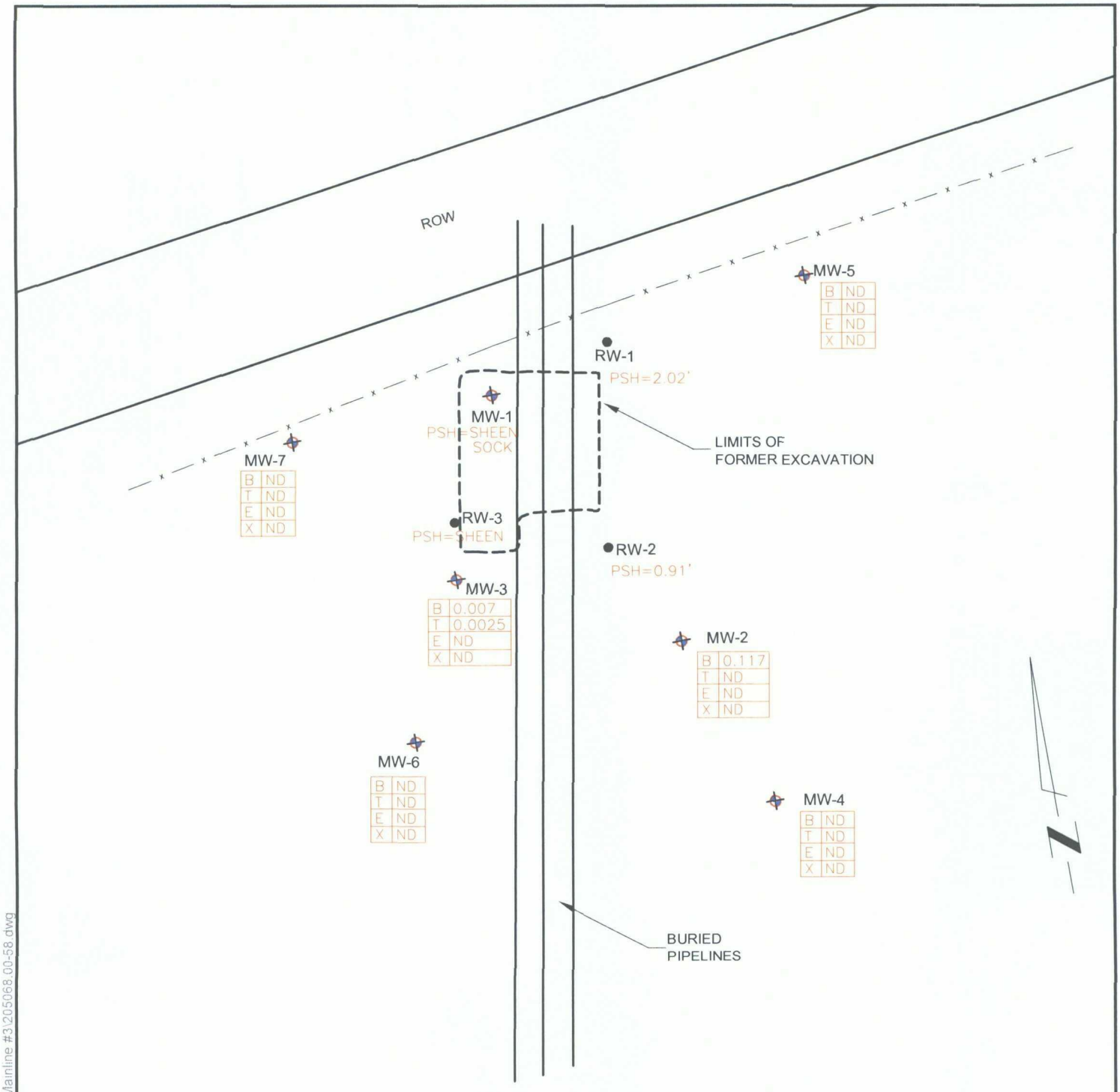


NMOCD Remediation Criteria

| | |
|---|---|
| Benzene | 0.01 |
| Toluene | 0.75 |
| Ethylbenzene | 0.75 |
| Total Xylenes | 0.62 |

LEGEND:

- RW-1 -RECOVERY WELL LOCATION
- MW-1 -MONITOR WELL LOCATION

Note: All concentration in mg/L
PSH= PSH present and well not sampled.
J=estimated value
ND=concentrations below lab SDLs
NS=Wells not sampled during this sampling event.

0 50
FEET
APPROXIMATE SCALE

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Figure 4A
1st Quarter 2009 - BTEX Concentration Map
Febuary 18, 2009
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #3
SRS. No.: 2003-00117
Lea County, New Mexico

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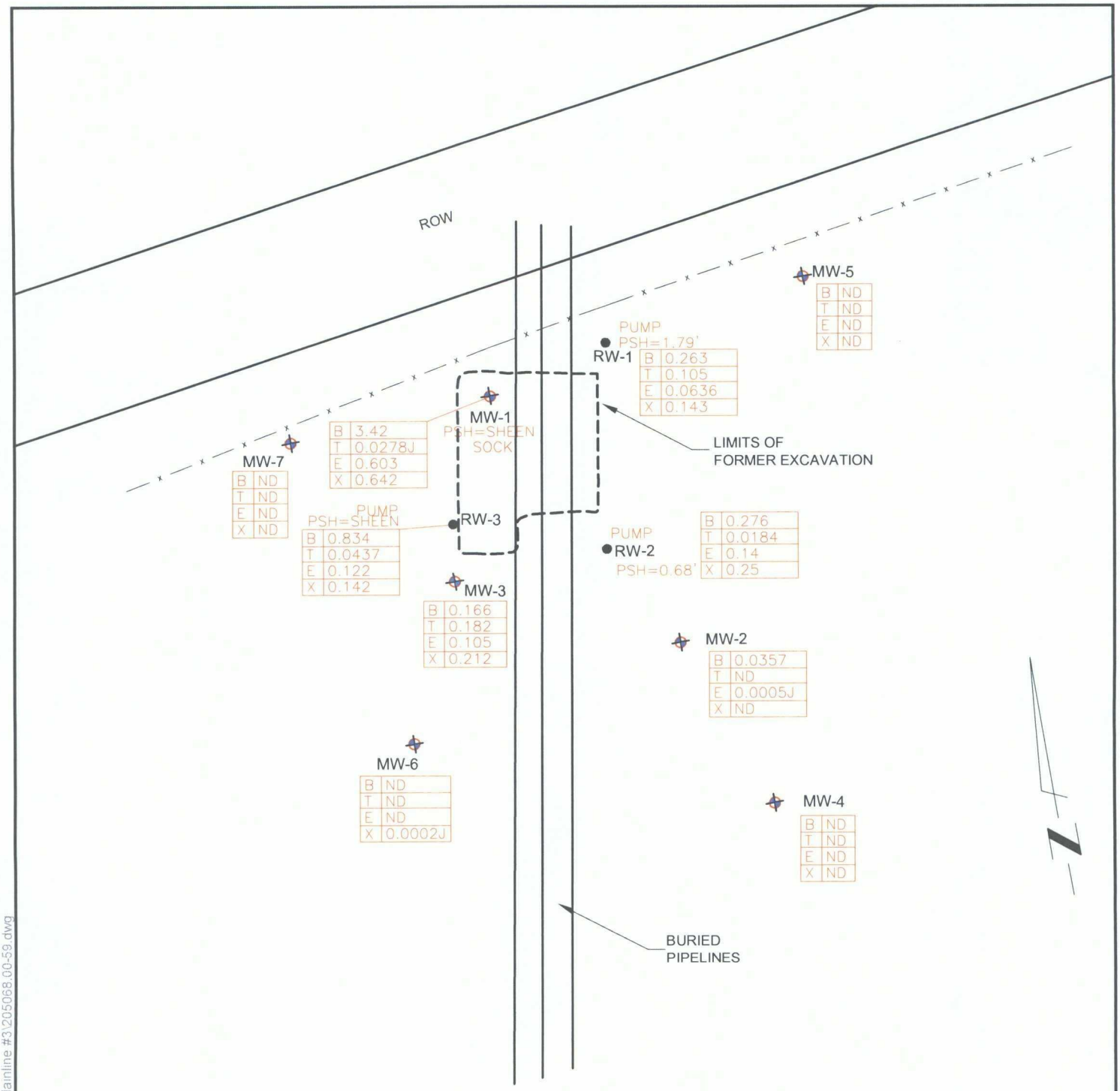


NMOCD Remediation Criteria

| | |
|---|---|
| Benzene | 0.01 |
| Toluene | 0.75 |
| Ethylbenzene | 0.75 |
| Total Xylenes | 0.62 |

LEGEND:

- RW-1 -RECOVERY WELL LOCATION
- MW-1 -MONITOR WELL LOCATION

Note: All concentration in mg/L.
PSH= PSH present and well not sampled.
J=estimated value
ND=concentrations below lab SDLs
NS=Wells not sampled during this sampling event.

0 50
FEET
APPROXIMATE SCALE

PREMIER
ENVIRONMENTAL SERVICES, INC.

Figure 4B(i)
2nd Quarter 2009 - BTEX Concentration Map
May 20, 2009
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #3
SRS. No.: 2003-00117
Lea County, New Mexico

| PROJ. NO: 205068.00 | CK: CBP | DATE: 02/10 |
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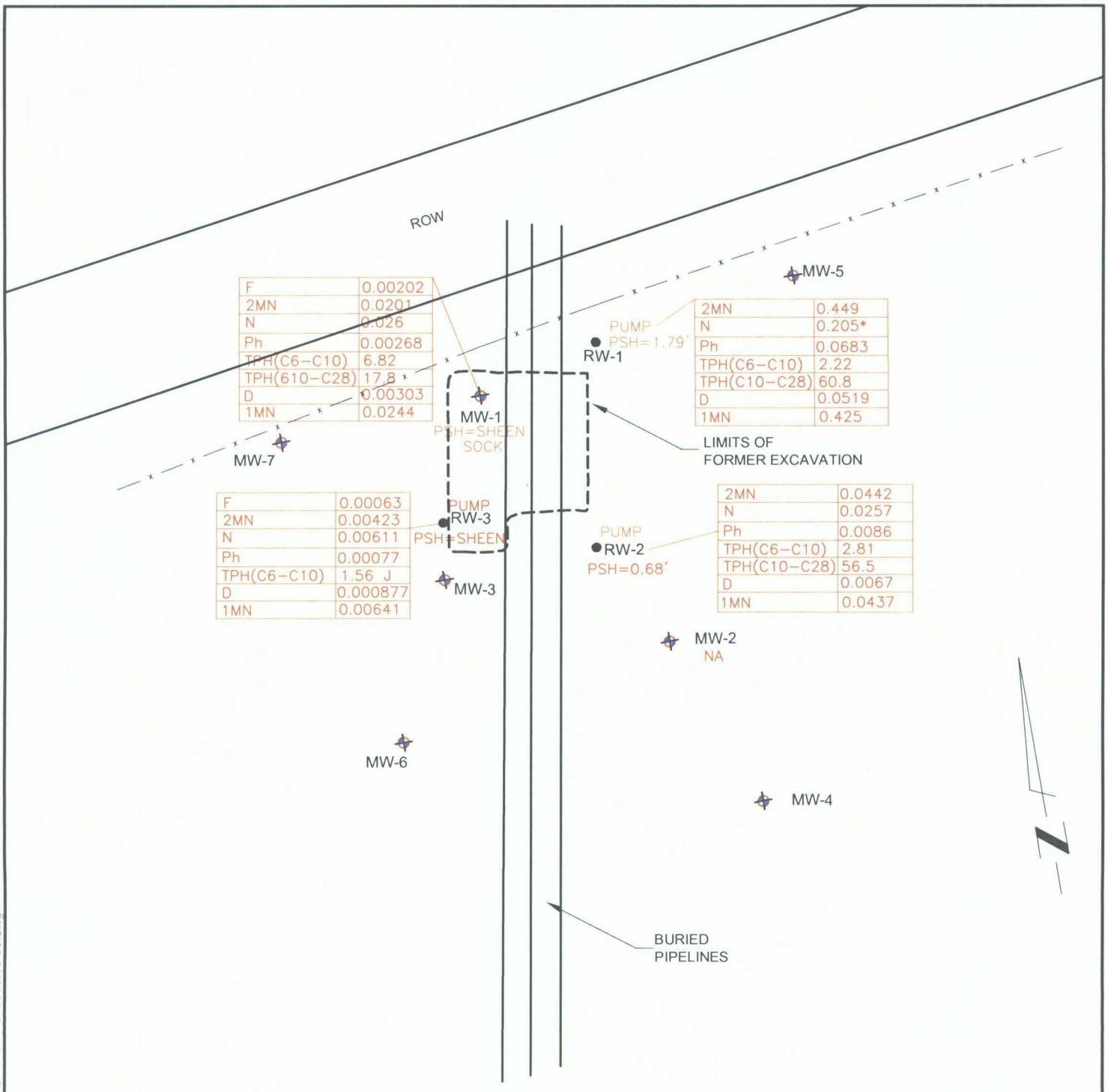


| | |
|---|---|
| F | 0.00202 |
| 2MN | 0.0201 |
| N | 0.026 |
| Ph | 0.00268 |
| TPH(C6-C10) | 6.82 |
| TPH(610-C28) | 17.8 |
| D | 0.00303 |
| 1MN | 0.0244 |

| | |
|---|---|
| 2MN | 0.449 |
| N | 0.205* |
| Ph | 0.0683 |
| TPH(C6-C10) | 2.22 |
| TPH(C10-C28) | 60.8 |
| D | 0.0519 |
| 1MN | 0.425 |

| | |
|---|---|
| F | 0.00063 |
| 2MN | 0.00423 |
| N | 0.00611 |
| Ph | 0.00077 |
| TPH(C6-C10) | 1.56 J |
| D | 0.000877 |
| 1MN | 0.00641 |

| | |
|---|---|
| 2MN | 0.0442 |
| N | 0.0257 |
| Ph | 0.0086 |
| TPH(C6-C10) | 2.81 |
| TPH(C10-C28) | 56.5 |
| D | 0.0067 |
| 1MN | 0.0437 |

LEGEND:

- RW-1 -RECOVERY WELL LOCATION
- MW-1 -MONITOR WELL LOCATION

F=Flourene
2MN=2-Methylnaphthalene
N=Naphthalene
Ph=Phenanthrene
D=Dibenzofuran
1MN=1-Methylnaphthalene
ND=Not detected above SDL
PAH=Polynuclear Aromatic Hydrocarbons
NA=Not Analyzed for PAH
*Estimated concentration value greater than standard range
TPH=Total Petroleum hydrocarbon
Note: All concentrations in mg/L.

0 50
FEET
APPROXIMATE SCALE

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ENVIRONMENTAL SERVICES, INC.

Figure 4B(ii)
2nd Quarter 2009 - PAH Concentration Map
Summary of Detections
May 20, 2009
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #3
SRS. No.: 2003-00117
Lea County, New Mexico

| PROJ. NO: 205068.00 | CK: CBP | DATE: 02/10 |
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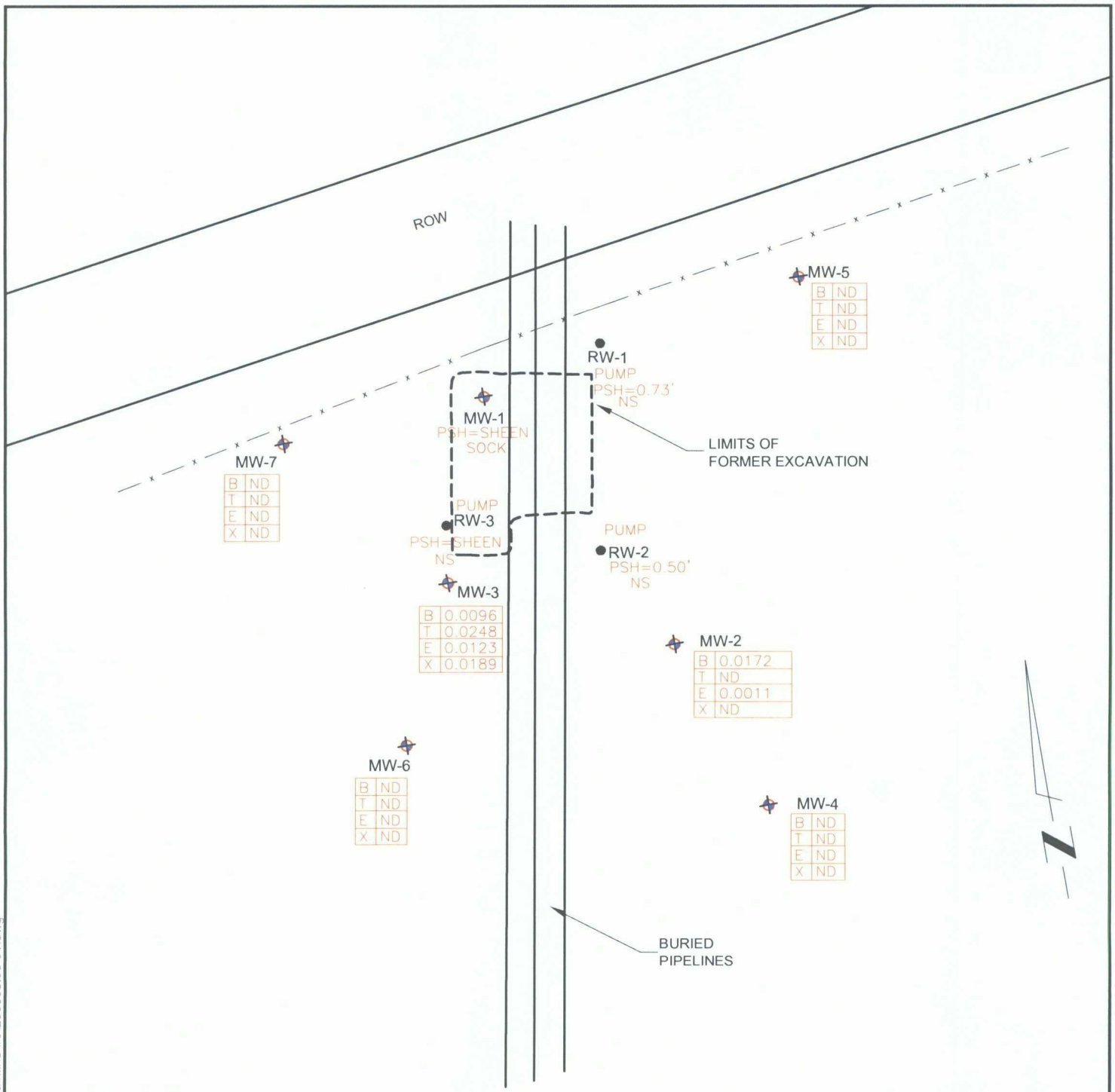


NMOCD Remediation Criteria

| | |
|---|---|
| Benzene | 0.01 |
| Toluene | 0.75 |
| Ethylbenzene | 0.75 |
| Total Xylenes | 0.62 |

LEGEND:

- RW-1 -RECOVERY WELL LOCATION
- MW-1 -MONITOR WELL LOCATION

Note: All concentration in mg/L.
PSH= PSH present and well not sampled
J=estimated value
ND=concentrations below lab SDLs
NS=Wells not sampled during this sampling event

0 50
FEET
APPROXIMATE SCALE

PREMIER
ENVIRONMENTAL SERVICES, INC.

Figure 4C
3rd Quarter 2009 - BTEX Concentration Map
August 27, 2009
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #3
SRS. No.: 2003-00117
Lea County, New Mexico

| PROJ. NO: 205068.00 | CK: CBP | DATE: 02/10 |
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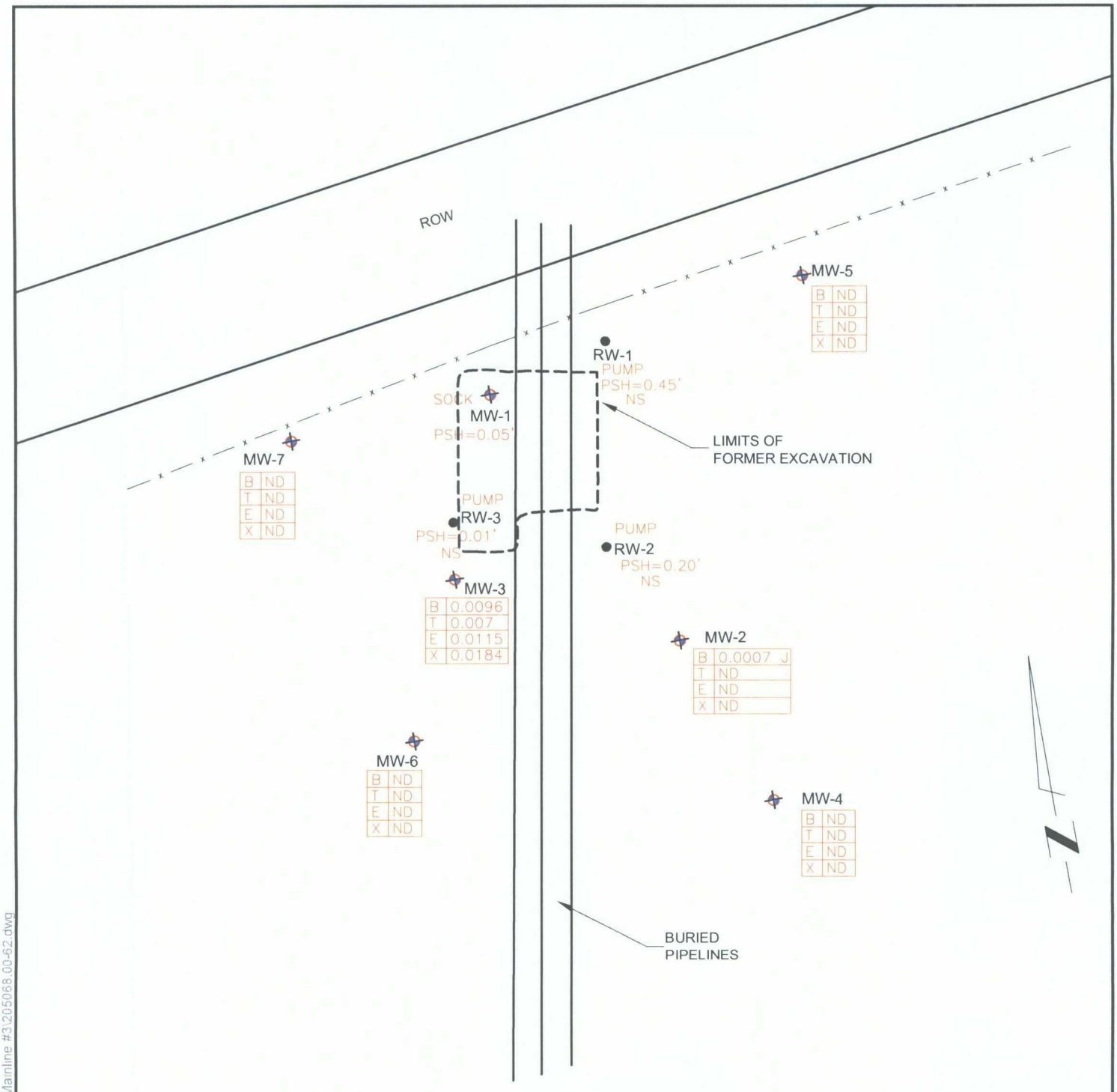


NMOCD Remediation Criteria

| | |
|---|---|
| Benzene | 0.01 |
| Toluene | 0.75 |
| Ethylbenzene | 0.75 |
| Total Xylenes | 0.62 |

LEGEND:

- RW-1 -RECOVERY WELL LOCATION
- MW-1 -MONITOR WELL LOCATION

Note: All concentration in mg/L.
PSH= PSH present and well not sampled
J=estimated value
ND=concentrations below lab SDLs
NS=Wells not sampled during this sampling event.

0 50
FEET
APPROXIMATE SCALE

PREMIER
ENVIRONMENTAL SERVICES, INC.

Figure 4D
4th Quarter 2009 - BTEX Concentration Map
November 18, 2009
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #3
SRS. No.: 2003-00117
Lea County, New Mexico

| PROJ. NO: 205068.00 | CK: CBP | DATE: 02/10 |
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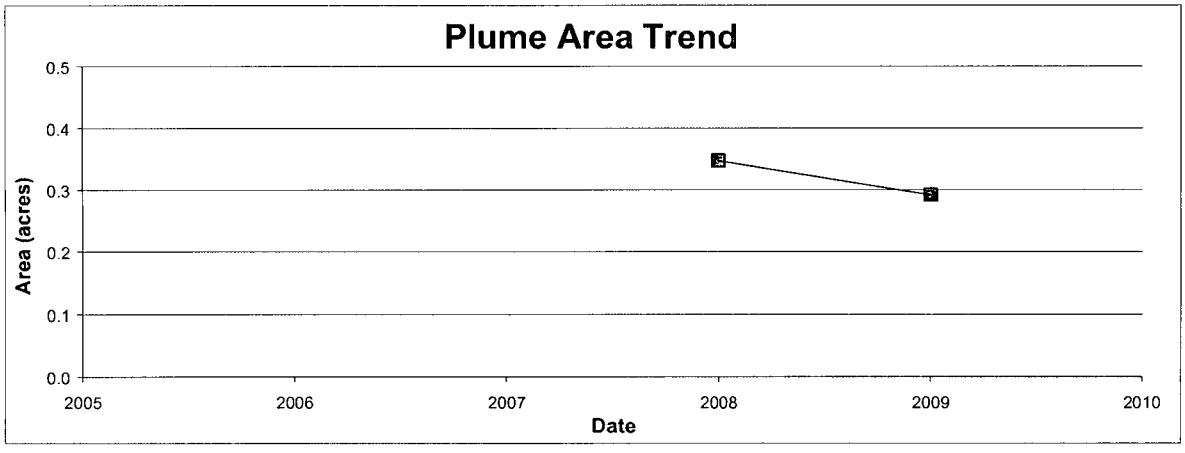


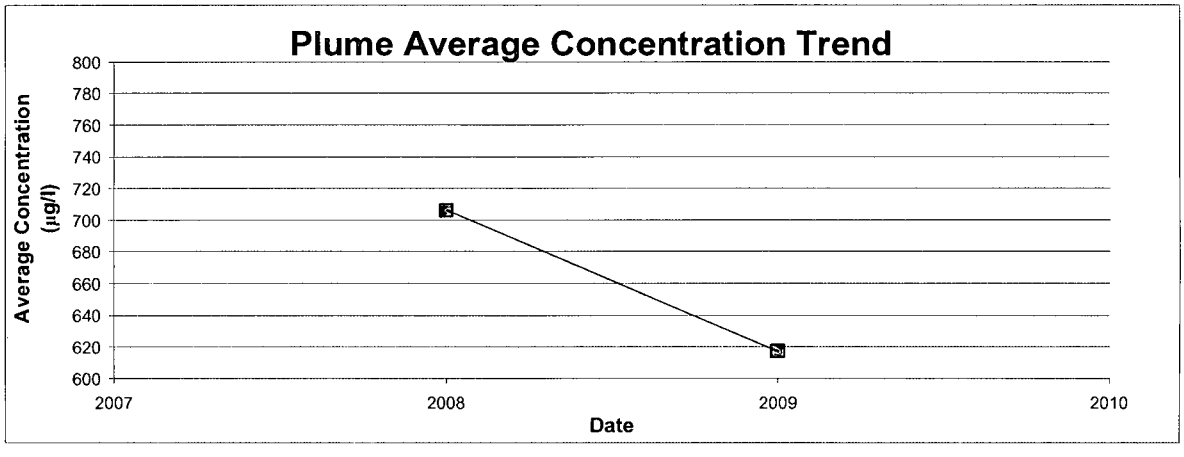


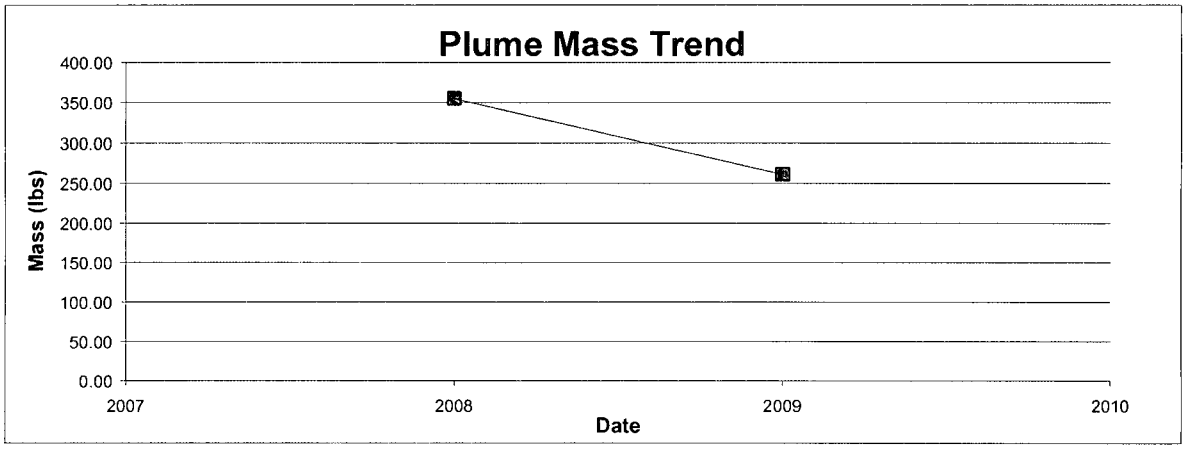


## Summary of Plume Stability Characteristics

| Date | Area (Acres) | Average Conc. (µg/l) | Mass (lbs) |
|---|---|---|---|
| 2008 | 0.35 | 706 | 355 |
| 2009 | 0.29 | 617 | 261 |

PREMIER
ENVIRONMENTAL SERVICES, INC

Figure 5
Plume Stability Analysis Summary
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #3
SRS. No.: 2003-00117
Lea County, New Mexico

| PROJ. NO: 205068.00 | CK: CBP | DATE: 03/10 |
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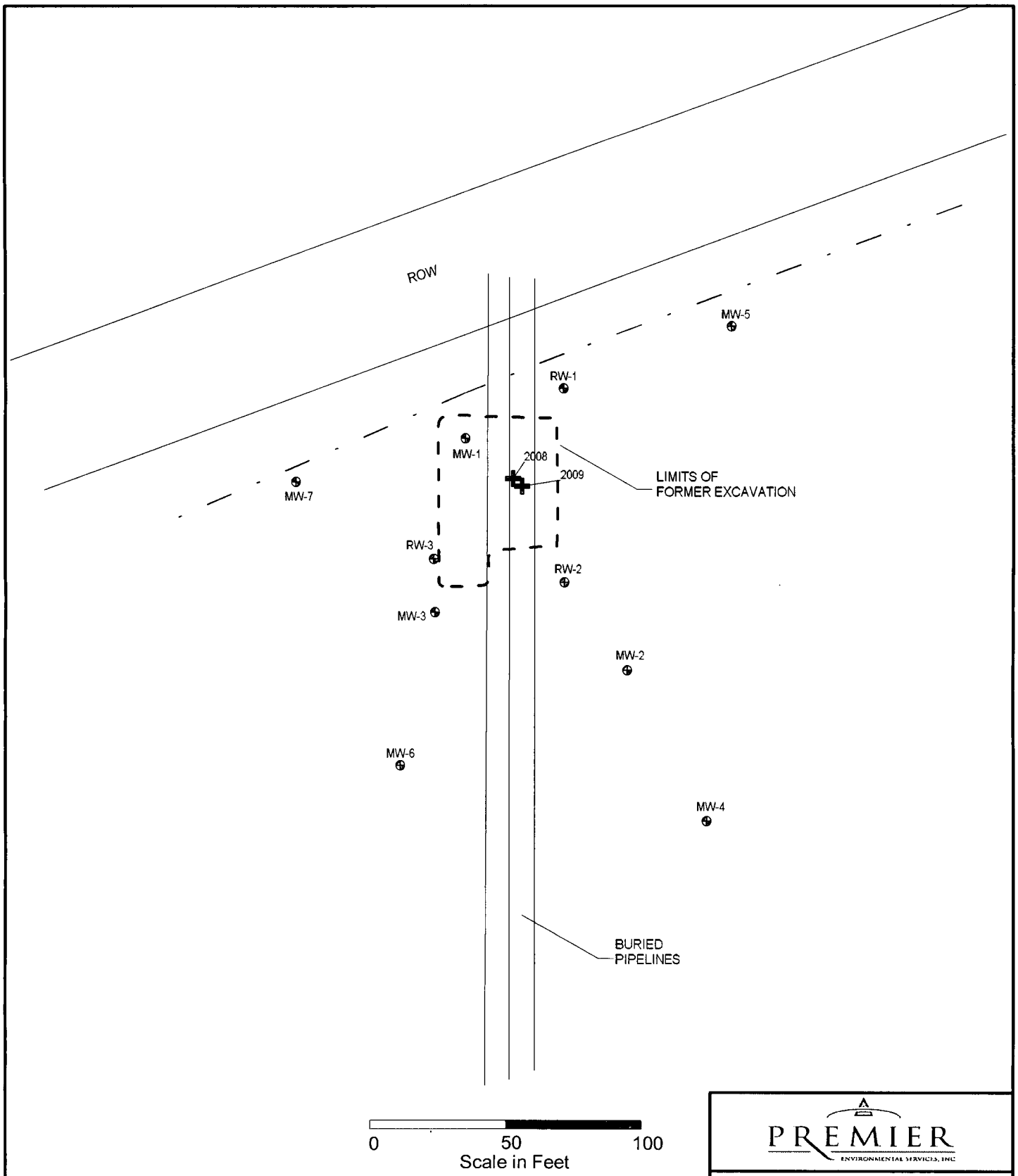


LEGEND:

RW ⊕ RW - Recovery Wells

MW ⊕ MW - Monitor Wells

\+ Plume Center of Mass

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ENVIRONMENTAL SERVICES, INC

Figure 6
Plume Center of Mass -
2008 and 2009
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #3
SRS. No.: 2003-00117
Lea County, New Mexico

| PROJ. NO: 205068.00 | CK: CBP | DATE: 03/10 |
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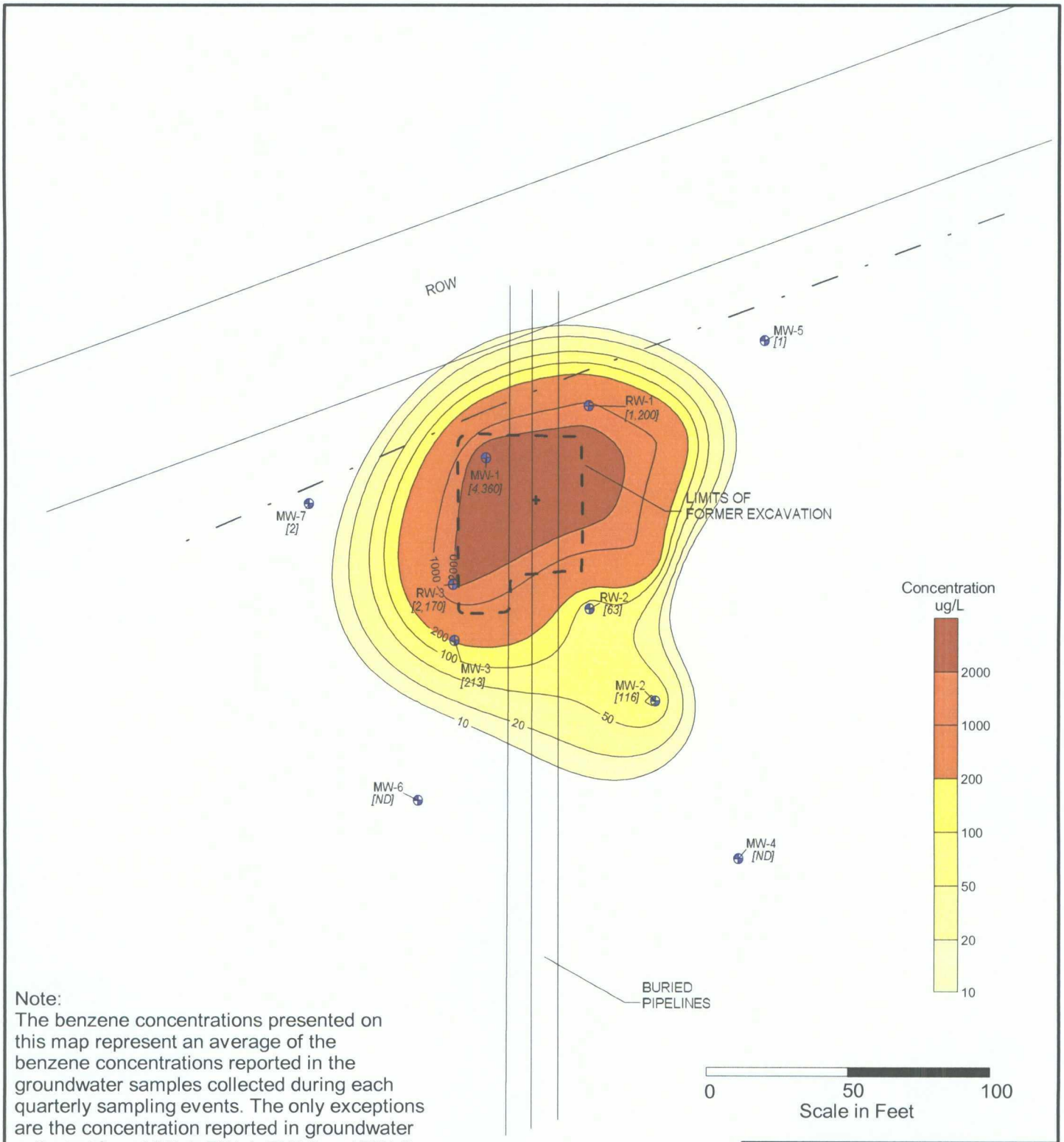


Note:
The benzene concentrations presented on this map represent an average of the benzene concentrations reported in the groundwater samples collected during each quarterly sampling events. The only exceptions are the concentration reported in groundwater collected from MW-1, RW-1, RW-2 and RW-3. These wells were only sampled during the 2nd Quarter 2008.

LEGEND:

RW ⊕ RW - Recovery Wells

MW ⊕ MW - Monitor Wells

\+ Plume Center of Mass

*[2]* Benzene Concentration in ug/L

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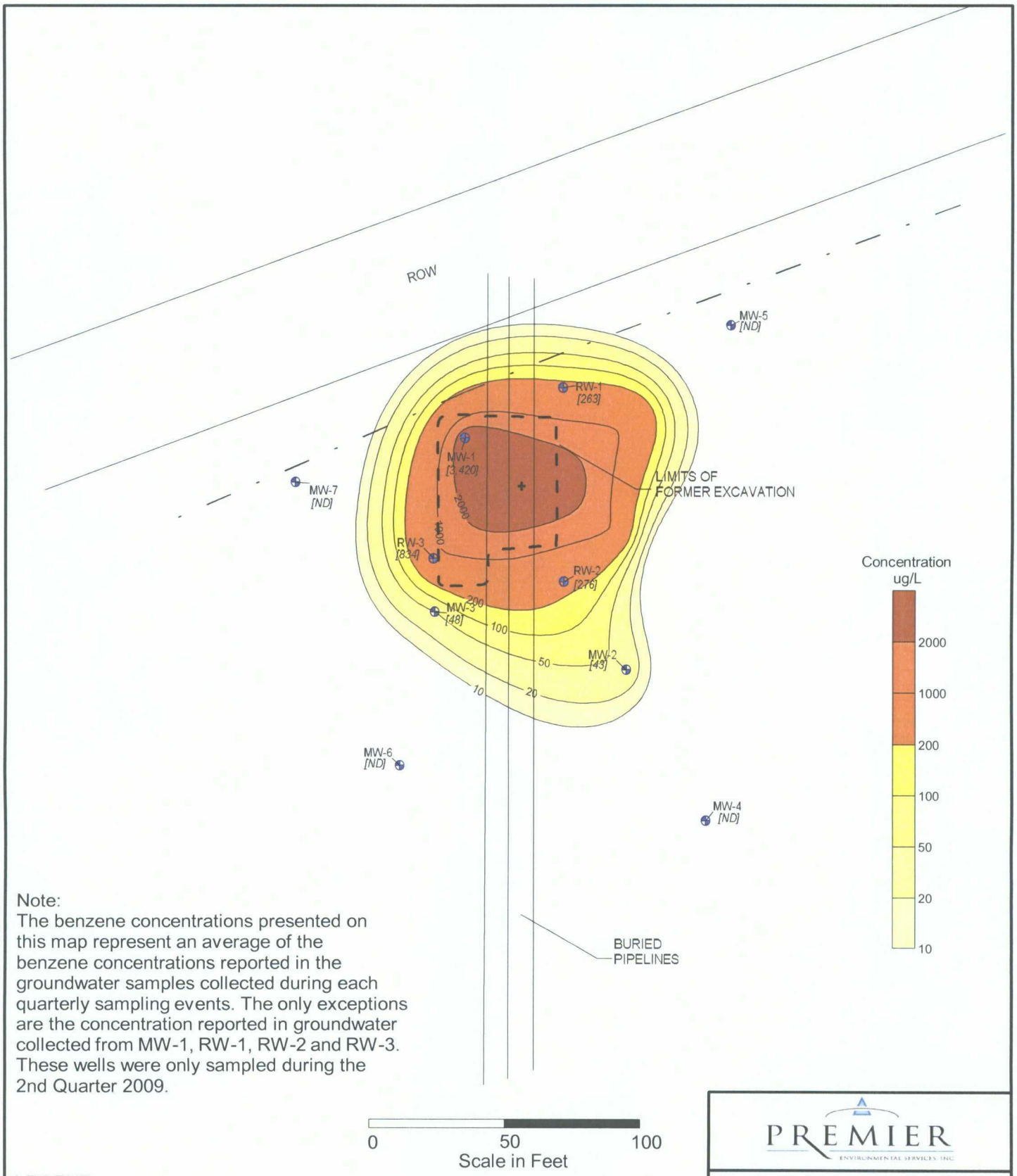
Figure 7
2008 - Benzene Isopleth Map
Wells with PSH
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #3
SRS. No.: 2003-00117
Lea County, New Mexico

| PROJ. NO: 205068.00 | CK: CBP | DATE: 03/10 |
|---|---|---|




Note:
The benzene concentrations presented on this map represent an average of the benzene concentrations reported in the groundwater samples collected during each quarterly sampling events. The only exceptions are the concentration reported in groundwater collected from MW-1, RW-1, RW-2 and RW-3. These wells were only sampled during the 2nd Quarter 2009.

LEGEND:

RW RW - Recovery Wells

MW MW - Monitor Wells

\+ Plume Center of Mass

*[2]* Benzene Concentration in ug/L

PREMIER
ENVIRONMENTAL SERVICES, INC.

Figure 8
2009 - Benzene Isopleth Map
Dissolved Phase Plume
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #3
SRS. No.: 2003-00117
Lea County, New Mexico

| PROJ. NO: 205068.00 | CK: CBP | DATE: 03/10 |
|---|---|---|

**Figure 9**
**Benzene Concentration Trend in Monitor Wells MW-2**
**Plains Pipeline, L.P.**
**Vacuum to Jal 14" Mainline #3**
**SRS No.: 2003-00117**
**Lea County, New Mexico**

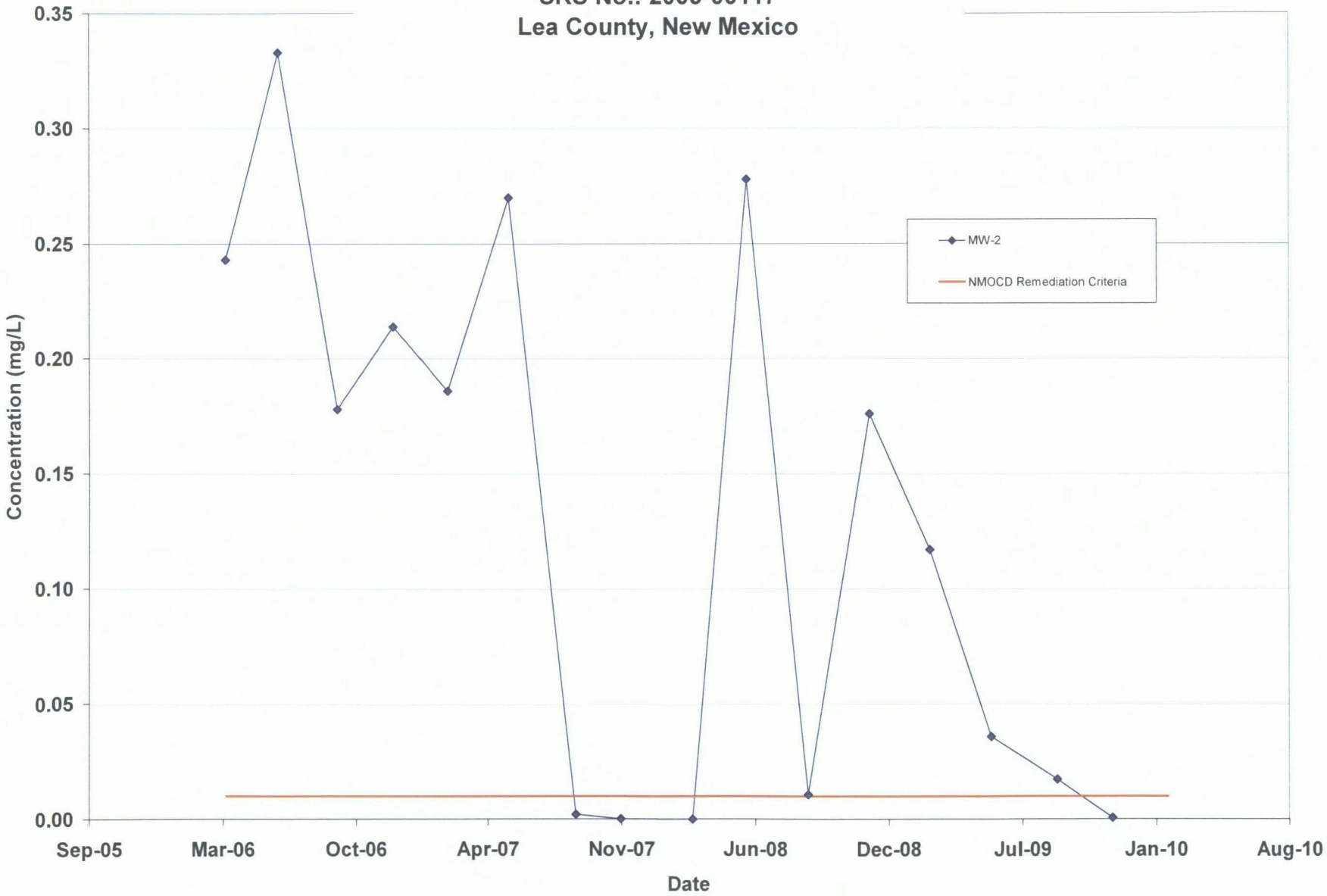


**Figure 10**
**Benzene Concentration Trend in Monitor Well MW-3**
**Plains Pipeline, L.P.**
**Vacuum to Jal 14" Mainline #3**
**SRS No.: 2003-00117**
**Lea County, New Mexico**

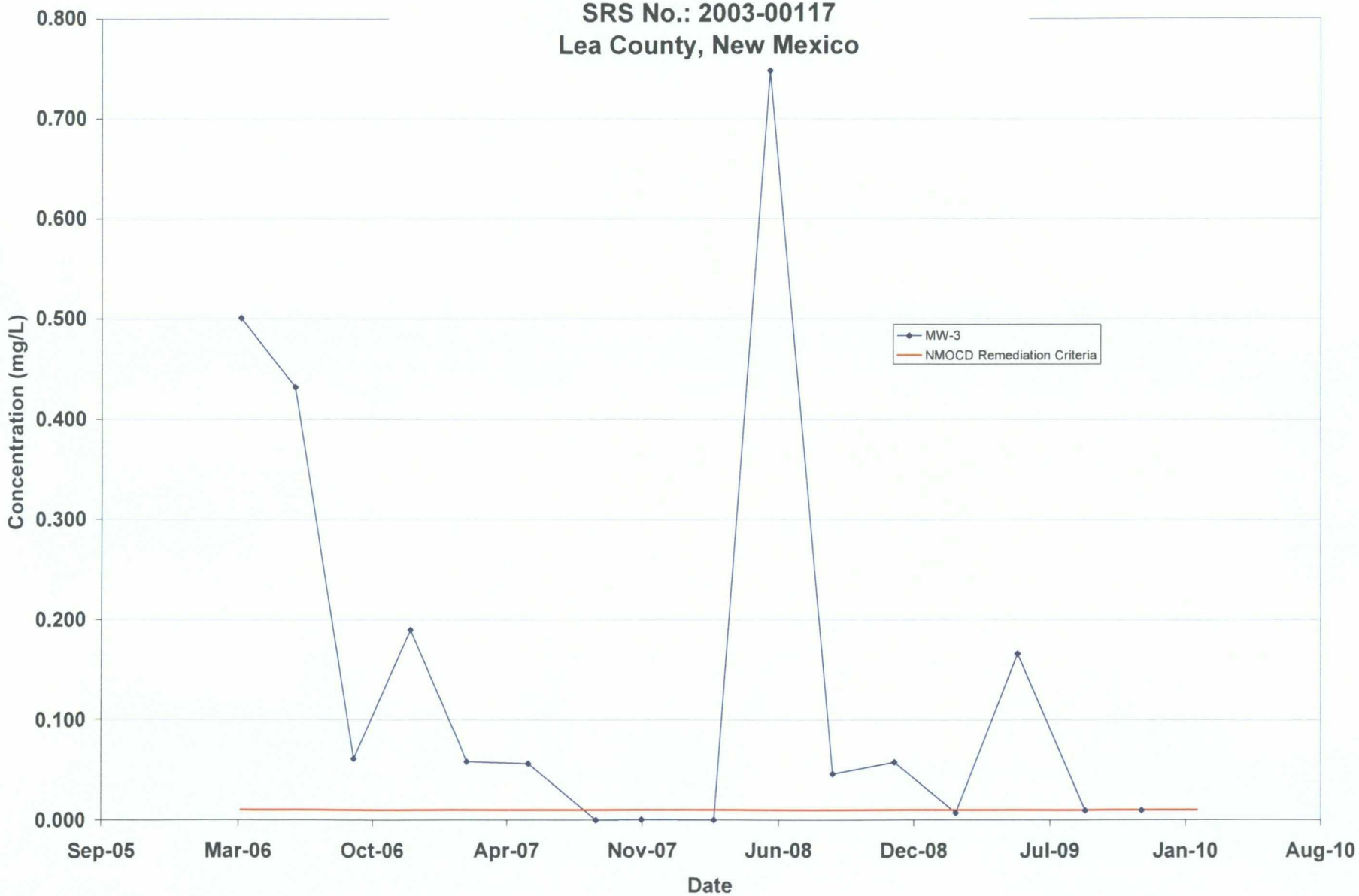
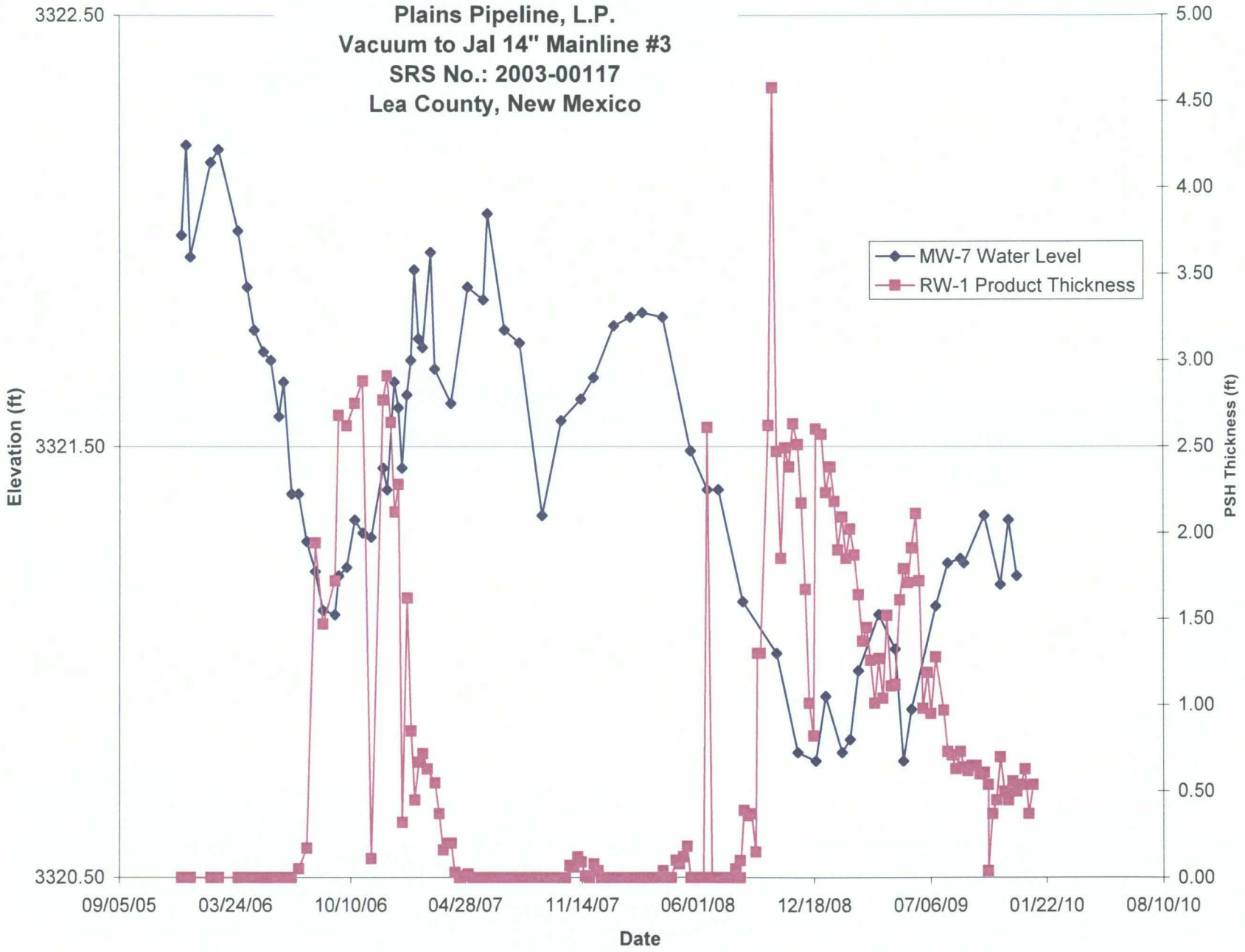


**Figure 11**
**Water Elevation And PSH Thickness Data**
**Plains Pipeline, L.P.**
**Vacuum to Jal 14" Mainline #3**
**SRS No.: 2003-00117**
**Lea County, New Mexico**



# APPENDIX B

## Tables

Table 1 – 2009 Groundwater Elevation and PSH Recovery Data

Table 2 – Historical Groundwater Elevation Data
*(Available on CD attached to back cover)*

Table 3 – 2009 Groundwater Sample Analytical Results

Table 4 – BTEX Groundwater Sample Analytical Results for wells with PSH/Sheen

Table 5 – Groundwater Analytical Results for Polynuclear Aromatic Hydrocarbons (PAHs) from wells with Sheen/PSH

Table 6 – 2009 Monthly PSH and Dissolved Phase Groundwater Recovery Data

# TABLE 1
## 2009 GROUNDWATER ELEVATION AND PSH RECOVERY DATA
**Plains Pipeline, L.P.**
**SRS # 2003-00117**
**Vacuum to Jal Mainline #3**
**Lea County, New Mexico**

| Well Number | Date Measured | Top of Casing Elevation (ft) | Total Depth (ft) | Depth to Product (ft) | Depth to Water (ft) | PSH Thickness (ft) | Recovery Method | Recovery | | Corrected Groundwater Elevation (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | PSH (gallons) | Water (gallons) | |
| MW-1 | 01/07/09 | 3362.64 | 55.55 | 49.10 | 49.21 | 0.11 | Hand bail | 0.05 | 9.95 | 3313.52 |
| | 01/07/09 | 3362.64 | 55.55 | 51.56 | 51.56 | 0.00 | NA | NA | NA | 3311.08 |
| | 01/15/09 | 3362.64 | 55.55 | 49.33 | 49.33 | 0.00 | New Sock | NA | NA | 3313.31 |
| | 01/22/09 | 3362.64 | 55.55 | 49.09 | 49.09 | 0.00 | NA | NA | NA | 3313.55 |
| | 01/28/09 | 3362.64 | 55.55 | 49.21 | 49.21 | 0.00 | NA | NA | NA | 3313.43 |
| | 02/04/09 | 3362.64 | 65.63 | 49.27 | 49.27 | 0.00 | NA | NA | NA | 3313.37 |
| | 02/18/09 | 3362.64 | 65.63 | 49.22 | 49.22 | 0.00 | Pump/ New sock | 0 | 20 | 3313.42 |
| | 02/18/09 | 3362.64 | 65.63 | 51.62 | 51.62 | 0.00 | NA | NA | NA | 3311.02 |
| | 02/25/09 | 3362.64 | 65.63 | 49.14 | 49.14 | 0.00 | New Sock | NA | NA | 3313.50 |
| | 03/04/09 | 3362.64 | 55.60 | 49.07 | 49.07 | 0.00 | Flip Sock | NA | NA | 3313.57 |
| | 03/11/09 | 3362.64 | 55.60 | 49.24 | 49.24 | 0.00 | New Sock | NA | NA | 3313.40 |
| | 03/18/09 | 3362.64 | 55.60 | 49.13 | 49.13 | 0.00 | Sock | NA | NA | 3313.51 |
| | 03/25/09 | 3362.64 | 55.60 | 49.10 | 49.10 | 0.00 | New Sock | NA | NA | 3313.54 |
| | 04/01/09 | 3362.64 | 55.60 | 48.94 | 48.94 | 0.00 | Flip Sock | NA | NA | 3313.70 |
| | 04/08/09 | 3362.64 | 55.60 | 49.09 | 49.09 | 0.00 | NA | NA | NA | 3313.55 |
| | 04/15/09 | 3362.64 | 55.60 | 49.05 | 49.05 | 0.00 | NA | NA | NA | 3313.59 |
| | 04/22/09 | 3362.64 | 55.60 | 49.10 | 49.10 | 0.00 | NA | NA | NA | 3313.54 |
| | 05/06/09 | 3362.64 | 55.60 | 49.17 | 49.17 | 0.00 | NA | NA | NA | 3313.47 |
| | 05/14/09 | 3362.64 | 55.60 | 49.34 | 49.34 | 0.00 | NA | NA | NA | 3313.30 |
| | 05/20/09 | 3362.64 | 55.60 | 49.21 | 49.21 | 0.00 | NA | NA | NA | 3313.43 |
| | 05/28/09 | 3362.64 | 55.60 | 49.26 | 49.26 | 0.00 | NA | NA | NA | 3313.38 |
| | 06/03/09 | 3362.64 | 55.60 | 49.49 | 49.49 | 0.00 | NA | NA | NA | 3313.15 |
| | 06/11/09 | 3362.64 | 55.60 | 49.42 | 49.42 | 0.00 | NA | NA | NA | 3313.22 |
| | 06/17/09 | 3362.64 | 55.60 | 49.38 | 49.38 | 0.00 | NA | NA | NA | 3313.26 |
| | 06/23/09 | 3362.64 | 55.60 | 49.35 | 49.35 | 0.00 | NA | NA | NA | 3313.29 |
| | 07/01/09 | 3362.64 | 55.60 | 48.19 | 48.19 | 0.00 | New Sock | NA | NA | 3314.45 |
| | 07/07/09 | 3362.64 | 55.60 | 49.18 | 49.18 | 0.00 | NA | NA | NA | 3313.46 |
| | 07/15/09 | 3362.64 | 55.60 | 49.20 | 49.20 | 0.00 | NA | NA | NA | 3313.44 |
| | 07/29/09 | 3362.64 | 55.60 | 49.16 | 49.20 | 0.04 | NA | NA | NA | 3313.47 |
| | 07/29/09 | 3362.64 | 55.60 | 53.00 | 53.00 | 0.00 | NA | 0 | 10 | 3309.64 |
| | 08/05/09 | 3362.64 | 55.60 | 49.24 | 49.24 | 0.00 | New Sock | NA | NA | 3313.40 |
| | 08/12/09 | 3362.64 | 55.60 | 49.10 | 49.10 | 0.00 | Flip Sock | NA | NA | 3313.54 |
| | 08/19/09 | 3362.64 | 55.60 | 49.00 | 49.00 | 0.00 | New Sock | NA | NA | 3313.64 |
| | 08/27/09 | 3362.64 | 55.60 | 48.97 | 48.97 | 0.00 | Flip Sock | NA | NA | 3313.67 |
| | 09/02/09 | 3362.64 | 55.60 | 48.93 | 48.93 | 0.00 | NA | NA | NA | 3313.71 |
| | 09/09/09 | 3362.64 | 55.60 | 49.12 | 49.12 | 0.00 | NA | NA | NA | 3313.52 |
| | 09/16/09 | 3362.64 | 55.60 | 48.95 | 48.95 | 0.00 | NA | NA | NA | 3313.69 |
| | 09/23/09 | 3362.64 | 55.60 | 49.04 | 49.04 | 0.00 | NA | NA | NA | 3313.60 |
| | 09/30/09 | 3362.64 | 55.60 | 48.96 | 48.96 | 0.00 | New Sock | 0 | 6 (Dry) | 3313.68 |
| | 09/30/09 | 3362.64 | 55.60 | 53.55 | 53.55 | 0.00 | NA | NA | NA | 3309.09 |
| | 10/07/09 | 3362.64 | 55.60 | 49.10 | 49.10 | 0.00 | NA | NA | NA | 3313.54 |
| | 10/14/09 | 3362.64 | 55.60 | 48.94 | 48.94 | 0.00 | Flip Sock | NA | NA | 3313.70 |
| | 10/21/09 | 3362.64 | 55.60 | 48.83 | 48.83 | 0.00 | New Sock | NA | NA | 3313.81 |
| | 10/28/09 | 3362.64 | 55.60 | 48.70 | 48.70 | 0.00 | NA | 0 | 20 | 3313.94 |
| | 10/28/09 | 3362.64 | 55.60 | 49.72 | 49.72 | 0.00 | NA | NA | NA | 3312.92 |
| | 11/04/09 | 3362.64 | 55.60 | 48.91 | 49.00 | 0.09 | NA | Sheen | 10 | 3313.72 |
| | 11/04/09 | 3362.64 | 55.60 | 52.01 | 52.01 | 0.00 | NA | NA | NA | 3310.63 |
| | 11/11/09 | 3362.64 | 55.60 | 48.91 | 48.97 | 0.06 | NA | Sheen | 10 | 3313.72 |
| | 11/11/09 | 3362.64 | 55.60 | 52.05 | 52.05 | 0.00 | NA | NA | NA | 3310.59 |
| | 11/18/09 | 3362.64 | 55.60 | 48.76 | 48.81 | 0.05 | NA | Sheen | 10 | 3313.87 |
| | 11/18/09 | 3362.64 | 55.60 | 49.43 | 49.43 | 0.00 | NA | NA | NA | 3313.21 |
| | 11/25/09 | 3362.64 | 55.60 | 48.91 | 48.99 | 0.08 | NA | Sheen | 10 | 3313.72 |
| | 11/25/09 | 3362.64 | 55.60 | 53.54 | 53.54 | 0.00 | NA | NA | NA | 3309.10 |
| | 12/02/09 | 3362.64 | 55.60 | 48.94 | 49.00 | 0.06 | NA | Sheen | 10 | 3313.69 |
| | 12/02/09 | 3362.64 | 55.60 | 51.20 | 51.20 | 0.00 | NA | NA | NA | 3311.44 |
| | 12/09/09 | 3362.64 | 55.60 | 48.91 | 48.96 | 0.05 | NA | Sheen | 10 | 3313.72 |
| | 12/09/09 | 3362.64 | 55.60 | 51.18 | 51.18 | 0.00 | NA | NA | NA | 3311.46 |
| | 12/16/09 | 3362.64 | 55.60 | 48.87 | 48.95 | 0.08 | NA | Sheen | 15 | 3313.76 |
| | 12/16/09 | 3362.64 | 55.60 | 53.30 | 53.30 | 0.00 | NA | NA | NA | 3309.34 |
| | 12/23/09 | 3362.64 | 55.60 | 48.68 | 48.73 | 0.05 | NA | Sheen | 10 | 3313.95 |
| | 12/23/09 | 3362.64 | 55.60 | 51.60 | 51.60 | 0.00 | NA | NA | NA | 3311.04 |
| | 12/30/09 | 3362.64 | 55.60 | 48.75 | 48.84 | 0.09 | NA | Sheen | 10 | 3313.88 |
| | 12/30/09 | 3362.64 | 55.60 | 52.61 | 52.61 | 0.00 | NA | NA | NA | 3310.03 |

# TABLE 1
## 2009 GROUNDWATER ELEVATION AND PSH RECOVERY DATA
**Plains Pipeline, L.P.**
**SRS # 2003-00117**
**Vacuum to Jal Mainline #3**
**Lea County, New Mexico**

| Well Number | Date Measured | Top of Casing Elevation (ft) | Total Depth (ft) | Depth to Product (ft) | Depth to Water (ft) | PSH Thickness (ft) | Recovery Method | Recovery | | Corrected Groundwater Elevation (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | PSH (gallons) | Water (gallons) | |
| MW-2 | 01/07/09 | 3367.00 | 56.28 | NA | 46.71 | NA | NA | NA | NA | 3320.29 |
| | 02/04/09 | 3367.00 | 56.28 | NA | 46.86 | NA | NA | NA | NA | 3320.14 |
| | 02/18/09 | 3367.00 | 56.50 | NA | 46.83 | NA | NA | NA | NA | 3320.17 |
| | 03/04/09 | 3367.00 | 56.51 | NA | 46.68 | NA | NA | NA | NA | 3320.32 |
| | 04/08/09 | 3367.00 | 56.51 | NA | 46.58 | NA | NA | NA | NA | 3320.42 |
| | 05/06/09 | 3367.00 | 56.51 | NA | 46.65 | NA | NA | NA | NA | 3320.35 |
| | 05/20/09 | 3367.00 | 56.51 | NA | 46.83 | NA | NA | NA | NA | 3320.17 |
| | 06/03/09 | 3367.00 | 56.51 | NA | 46.85 | NA | NA | NA | NA | 3320.15 |
| | 07/15/09 | 3367.00 | 56.51 | NA | 46.66 | NA | NA | NA | NA | 3320.34 |
| | 08/05/09 | 3367.00 | 56.51 | NA | 46.59 | NA | NA | NA | NA | 3320.41 |
| | 08/27/09 | 3367.00 | 56.30 | NA | 46.55 | NA | NA | NA | 5 | 3320.45 |
| | 09/02/09 | 3367.00 | 56.30 | NA | 46.58 | NA | NA | NA | NA | 3320.42 |
| | 10/07/09 | 3367.00 | 56.30 | NA | 46.52 | NA | NA | NA | NA | 3320.48 |
| | 11/04/09 | 3367.00 | 56.30 | NA | 46.63 | NA | NA | NA | NA | 3320.37 |
| | 11/18/09 | 3367.00 | 56.30 | NA | 46.48 | NA | NA | NA | NA | 3320.52 |
| | 12/02/09 | 3367.00 | 56.30 | NA | 46.56 | NA | NA | NA | NA | 3320.44 |
| MW-3 | 01/07/09 | 3369.1 | 55.28 | NA | 48.49 | NA | NA | NA | NA | 3320.61 |
| | 02/04/09 | 3369.1 | 55.27 | NA | 48.64 | NA | NA | NA | NA | 3320.46 |
| | 02/18/09 | 3369.1 | 55.28 | NA | 48.59 | NA | NA | NA | NA | 3320.51 |
| | 03/04/09 | 3369.1 | 55.24 | NA | 48.47 | NA | NA | NA | NA | 3320.63 |
| | 04/08/09 | 3369.1 | 55.24 | NA | 48.31 | NA | NA | NA | NA | 3320.79 |
| | 05/06/09 | 3369.1 | 55.24 | NA | 48.38 | NA | NA | NA | NA | 3320.72 |
| | 05/20/09 | 3369.1 | 55.24 | NA | 48.59 | NA | NA | NA | NA | 3320.51 |
| | 06/03/09 | 3369.1 | 55.24 | NA | 48.55 | NA | NA | NA | NA | 3320.55 |
| | 07/15/09 | 3369.1 | 55.24 | NA | 48.33 | NA | NA | NA | NA | 3320.77 |
| | 08/05/09 | 3369.1 | 55.24 | NA | 48.26 | NA | NA | NA | NA | 3320.84 |
| | 08/27/09 | 3369.1 | 56.18 | NA | 48.21 | NA | NA | NA | 4 | 3320.89 |
| | 09/02/09 | 3369.1 | 56.18 | NA | 48.23 | NA | NA | NA | NA | 3320.87 |
| | 10/07/09 | 3369.1 | 56.18 | NA | 48.14 | NA | NA | NA | NA | 3320.96 |
| | 11/04/09 | 3369.1 | 56.18 | NA | 48.30 | NA | NA | NA | NA | 3320.80 |
| | 11/18/09 | 3369.1 | 56.18 | NA | 48.14 | NA | NA | NA | NA | 3320.96 |
| | 12/02/09 | 3369.1 | 56.18 | NA | 48.25 | NA | NA | NA | NA | 3320.85 |
| MW-4 | 01/07/09 | 3365.12 | 59.44 | NA | 44.94 | NA | NA | NA | NA | 3320.18 |
| | 02/04/09 | 3365.12 | 59.43 | NA | 45.08 | NA | NA | NA | NA | 3320.04 |
| | 02/18/09 | 3365.12 | 59.38 | NA | 45.00 | NA | NA | NA | NA | 3320.12 |
| | 03/04/09 | 3365.12 | 59.21 | NA | 44.93 | NA | NA | NA | NA | 3320.19 |
| | 04/08/09 | 3365.12 | 59.21 | NA | 44.79 | NA | NA | NA | NA | 3320.33 |
| | 05/06/09 | 3365.12 | 59.21 | NA | 44.88 | NA | NA | NA | NA | 3320.24 |
| | 05/20/09 | 3365.12 | 59.21 | NA | 45.06 | NA | NA | NA | NA | 3320.06 |
| | 06/03/09 | 3365.12 | 59.21 | NA | 45.08 | NA | NA | NA | NA | 3320.04 |
| | 07/15/09 | 3365.12 | 59.21 | NA | 44.93 | NA | NA | NA | NA | 3320.19 |
| | 08/05/09 | 3365.12 | 59.21 | NA | 44.84 | NA | NA | NA | NA | 3320.28 |
| | 08/27/09 | 3365.12 | 59.40 | NA | 44.81 | NA | NA | NA | 29 | 3320.31 |
| | 09/02/09 | 3365.12 | 59.40 | NA | 44.83 | NA | NA | NA | NA | 3320.29 |
| | 10/07/09 | 3365.12 | 59.40 | NA | 44.78 | NA | NA | NA | NA | 3320.34 |
| | 11/04/09 | 3365.12 | 59.40 | NA | 44.89 | NA | NA | NA | NA | 3320.23 |
| | 11/18/09 | 3365.12 | 59.40 | NA | 44.73 | NA | NA | NA | NA | 3320.39 |
| | 12/02/09 | 3365.12 | 59.40 | NA | 44.84 | NA | NA | NA | NA | 3320.28 |
| MW-5 | 01/07/09 | 3364.74 | 55.03 | NA | 44.46 | NA | NA | NA | NA | 3320.28 |
| | 02/04/09 | 3364.74 | 53.01 | NA | 44.61 | NA | NA | NA | NA | 3320.13 |
| | 02/18/09 | 3364.74 | 52.96 | NA | 44.59 | NA | NA | NA | NA | 3320.15 |
| | 03/04/09 | 3364.74 | 53.04 | NA | 44.45 | NA | NA | NA | NA | 3320.29 |
| | 04/08/09 | 3364.74 | 53.04 | NA | 44.79 | NA | NA | NA | NA | 3319.95 |
| | 05/06/09 | 3364.74 | 53.04 | NA | 44.44 | NA | NA | NA | NA | 3320.30 |
| | 05/20/09 | 3364.74 | 53.04 | NA | 44.60 | NA | NA | NA | NA | 3320.14 |
| | 06/03/09 | 3364.74 | 53.04 | NA | 44.60 | NA | NA | NA | NA | 3320.14 |
| | 07/15/09 | 3364.74 | 53.04 | NA | 44.45 | NA | NA | NA | NA | 3320.29 |
| | 08/05/09 | 3364.74 | 53.04 | NA | 44.35 | NA | NA | NA | NA | 3320.39 |
| | 08/27/09 | 3364.74 | 53.03 | NA | 44.36 | NA | NA | NA | 5 | 3320.38 |

# TABLE 1
## 2009 GROUNDWATER ELEVATION AND PSH RECOVERY DATA
**Plains Pipeline, L.P.**
**SRS # 2003-00117**
**Vacuum to Jal Mainline #3**
**Lea County, New Mexico**

| Well Number | Date Measured | Top of Casing Elevation (ft) | Total Depth (ft) | Depth to Product (ft) | Depth to Water (ft) | PSH Thickness (ft) | Recovery Method | Recovery | | Corrected Groundwater Elevation (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | PSH (gallons) | Water (gallons) | |
| MW-5 | 09/02/09 | 3364.74 | 53.03 | NA | 44.34 | NA | NA | NA | NA | 3320.40 |
| | 10/07/09 | 3364.74 | 53.03 | NA | 44.28 | NA | NA | NA | NA | 3320.46 |
| | 11/04/09 | 3364.74 | 53.03 | NA | 44.79 | NA | NA | NA | NA | 3319.95 |
| | 11/18/09 | 3364.74 | 53.03 | NA | 44.25 | NA | NA | NA | NA | 3320.49 |
| | 12/02/09 | 3364.74 | 53.03 | NA | 44.32 | NA | NA | NA | NA | 3320.42 |
| MW-6 | 01/07/09 | 3368.96 | 59.47 | NA | 48.29 | NA | NA | NA | NA | 3320.67 |
| | 02/04/09 | 3368.96 | 59.23 | NA | 48.44 | NA | NA | NA | NA | 3320.52 |
| | 02/18/09 | 3368.96 | 59.43 | NA | 48.40 | NA | NA | NA | NA | 3320.56 |
| | 03/04/09 | 3368.96 | 59.22 | NA | 48.24 | NA | NA | NA | NA | 3320.72 |
| | 04/08/09 | 3368.96 | 59.22 | NA | 48.15 | NA | NA | NA | NA | 3320.81 |
| | 05/06/09 | 3368.96 | 59.22 | NA | 48.23 | NA | NA | NA | NA | 3320.73 |
| | 05/20/09 | 3368.96 | 59.22 | NA | 48.40 | NA | NA | NA | NA | 3320.56 |
| | 06/03/09 | 3368.96 | 59.22 | NA | 48.38 | NA | NA | NA | NA | 3320.58 |
| | 07/15/09 | 3368.96 | 59.22 | NA | 48.18 | NA | NA | NA | NA | 3320.78 |
| | 08/05/09 | 3368.96 | 59.22 | NA | 48.10 | NA | NA | NA | NA | 3320.86 |
| | 08/27/09 | 3368.96 | 59.21 | NA | 48.07 | NA | NA | NA | 22 | 3320.89 |
| | 09/02/09 | 3368.96 | 59.21 | NA | 48.10 | NA | NA | NA | NA | 3320.86 |
| | 10/07/09 | 3368.96 | 59.21 | NA | 48.99 | NA | NA | NA | NA | 3319.97 |
| | 11/04/09 | 3368.96 | 59.21 | NA | 49.12 | NA | NA | NA | NA | 3319.84 |
| | 11/18/09 | 3368.96 | 59.21 | NA | 48.00 | NA | NA | NA | NA | 3320.96 |
| | 12/02/09 | 3368.96 | 59.21 | NA | 48.10 | NA | NA | NA | NA | 3320.86 |
| MW-7 | 01/07/09 | 3370.25 | 58.72 | NA | 49.33 | NA | NA | NA | NA | 3320.92 |
| | 02/04/09 | 3370.25 | 58.73 | NA | 49.46 | NA | NA | NA | NA | 3320.79 |
| | 02/18/09 | 3370.25 | 58.69 | NA | 49.43 | NA | NA | NA | NA | 3320.82 |
| | 03/04/09 | 3370.25 | 58.75 | NA | 49.27 | NA | NA | NA | NA | 3320.98 |
| | 04/08/09 | 3370.25 | 58.75 | NA | 49.14 | NA | NA | NA | NA | 3321.11 |
| | 05/06/09 | 3370.25 | 58.75 | NA | 49.22 | NA | NA | NA | NA | 3321.03 |
| | 05/20/09 | 3370.25 | 58.75 | NA | 49.48 | NA | NA | NA | NA | 3320.77 |
| | 06/03/09 | 3370.25 | 58.75 | NA | 49.36 | NA | NA | NA | NA | 3320.89 |
| | 07/15/09 | 3370.25 | 58.75 | NA | 49.12 | NA | NA | NA | NA | 3321.13 |
| | 08/05/09 | 3370.25 | 58.75 | NA | 49.02 | NA | NA | NA | NA | 3321.23 |
| | 08/27/09 | 3370.25 | 59.69 | NA | 49.01 | NA | NA | NA | 5 | 3321.24 |
| | 09/02/09 | 3370.25 | 59.69 | NA | 49.02 | NA | NA | NA | NA | 3321.23 |
| | 10/07/09 | 3370.25 | 59.69 | NA | 48.91 | NA | NA | NA | NA | 3321.34 |
| | 11/04/09 | 3370.25 | 59.69 | NA | 49.07 | NA | NA | NA | NA | 3321.18 |
| | 11/18/09 | 3370.25 | 59.69 | NA | 48.92 | NA | NA | NA | NA | 3321.33 |
| | 12/02/09 | 3370.25 | 59.69 | NA | 49.05 | NA | NA | NA | NA | 3321.20 |
| RW-1 | 01/07/09 | 3368.12 | 58.70 | 47.30 | 49.53 | 2.23 | Hand Bailed | 10 | 17 | 3320.49 |
| | 01/07/09 | 3368.12 | 58.70 | 48.87 | 48.90 | 0.03 | NA | NA | NA | 3319.25 |
| | 01/15/09 | 3368.12 | 58.70 | 47.43 | 49.81 | 2.38 | Pump | 1 | 16 | 3320.33 |
| | 01/15/09 | 3368.12 | 58.70 | 48.56 | 48.56 | 0.00 | NA | NA | NA | 3319.56 |
| | 01/22/09 | 3368.12 | 58.70 | 47.31 | 49.49 | 2.18 | Pump | 1 | 19 | 3320.48 |
| | 01/22/09 | 3368.12 | 58.70 | 48.00 | 48.00 | 0.00 | NA | NA | NA | 3320.12 |
| | 01/28/09 | 3368.12 | 58.70 | 47.39 | 49.29 | 1.90 | Pump | 4 | 20 | 3320.45 |
| | 01/28/09 | 3368.12 | 58.70 | 48.31 | 48.31 | 0.00 | NA | NA | NA | 3319.81 |
| | 02/04/09 | 3368.12 | 58.70 | 47.48 | 49.57 | 2.09 | Pump | 1 | 19 | 3320.33 |
| | 02/04/09 | 3368.12 | 58.70 | 48.23 | 48.24 | 0.01 | NA | NA | NA | 3319.89 |
| | 02/11/09 | 3368.12 | 58.70 | 47.52 | 49.37 | 1.85 | Pump | 6 | 24 | 3320.32 |
| | 02/11/09 | 3368.12 | 58.70 | 48.18 | 48.18 | 0.00 | NA | NA | NA | 3319.94 |
| | 02/18/09 | 3368.12 | 58.70 | 47.44 | 49.46 | 2.02 | Pump | 1.5 | 18.5 | 3320.38 |
| | 02/18/09 | 3368.12 | 58.70 | 48.34 | 48.34 | 0.00 | NA | NA | NA | 3319.78 |
| | 02/25/09 | 3368.12 | 58.70 | 47.38 | 49.25 | 1.87 | Pump | 0.5 | 34.5 | 3320.46 |
| | 02/25/09 | 3368.12 | 58.70 | 48.57 | 48.57 | 0.00 | NA | NA | NA | 3319.55 |
| | 03/04/09 | 3368.12 | 58.70 | 47.36 | 49.00 | 1.64 | Pump | 1 | 29 | 3320.51 |
| | 03/04/09 | 3368.12 | 58.70 | 48.55 | 48.55 | 0.00 | NA | NA | NA | 3319.57 |
| | 03/11/09 | 3368.12 | 58.70 | 47.56 | 48.93 | 1.37 | Pump | 2 | 18 | 3320.35 |
| | 03/11/09 | 3368.12 | 58.70 | 48.17 | 48.17 | 0.00 | NA | NA | NA | 3319.95 |
| | 03/18/09 | 3368.12 | 58.70 | 47.34 | 48.79 | 1.45 | Pump | 1 | 19 | 3320.56 |
| | 03/18/09 | 3368.12 | 58.70 | 48.14 | 48.14 | 0.00 | NA | NA | NA | 3319.98 |
| | 03/25/09 | 3368.12 | 58.70 | 47.33 | 48.59 | 1.26 | Pump | 2.5 | 17.5 | 3320.60 |

# TABLE 1
## 2009 GROUNDWATER ELEVATION AND PSH RECOVERY DATA
**Plains Pipeline, L.P.**
**SRS # 2003-00117**
**Vacuum to Jal Mainline #3**
**Lea County, New Mexico**

| Well Number | Date Measured | Top of Casing Elevation (ft) | Total Depth (ft) | Depth to Product (ft) | Depth to Water (ft) | PSH Thickness (ft) | Recovery Method | Recovery | | Corrected Groundwater Elevation (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | PSH (gallons) | Water (gallons) | |
| RW-1 | 03/25/09 | 3368.12 | 58.70 | 48.29 | 48.29 | 0.00 | NA | NA | NA | 3319.83 |
| | 04/01/09 | 3368.12 | 58.70 | 47.24 | 48.25 | 1.01 | Hand Bailed | 1 | 9.75 | 3320.73 |
| | 04/01/09 | 3368.12 | 58.70 | 48.71 | 48.71 | 0.00 | NA | NA | NA | 3319.41 |
| | 04/08/09 | 3368.12 | 58.70 | 47.27 | 48.54 | 1.27 | Pump | 1 | 19 | 3320.66 |
| | 04/08/09 | 3368.12 | 58.70 | 48.72 | 48.72 | 0.00 | NA | NA | NA | 3319.40 |
| | 04/15/09 | 3368.12 | 58.70 | 47.29 | 48.33 | 1.04 | Pump | 1 | 19 | 3320.67 |
| | 04/15/09 | 3368.12 | 58.70 | 50.63 | 50.63 | 0.00 | NA | NA | NA | 3317.49 |
| | 04/22/09 | 3368.12 | 58.70 | 47.26 | 48.78 | 1.52 | Pump | 2.25 | 27.5 | 3320.63 |
| | 04/22/09 | 3368.12 | 58.70 | 49.08 | 49.08 | 0.00 | NA | NA | NA | 3319.04 |
| | 04/29/09 | 3368.12 | 58.70 | 47.32 | 48.43 | 1.11 | Pump | 1.5 | 18.5 | 3320.63 |
| | 04/29/09 | 3368.12 | 58.70 | 48.32 | 48.32 | 0.00 | NA | NA | NA | 3319.80 |
| | 05/06/09 | 3368.12 | 58.70 | 47.38 | 48.50 | 1.12 | Pump | 1.5 | 18.5 | 3320.57 |
| | 05/06/09 | 3368.12 | 58.70 | 47.75 | 47.75 | 0.00 | NA | NA | NA | 3320.37 |
| | 05/14/09 | 3368.12 | 58.70 | 47.49 | 49.10 | 1.61 | Pump | 1 | 19 | 3320.39 |
| | 05/14/09 | 3368.12 | 58.70 | 48.27 | 48.27 | 0.00 | NA | NA | NA | 3319.85 |
| | 05/20/09 | 3368.12 | 58.70 | 47.49 | 49.28 | 1.79 | NA | NA | NA | 3320.36 |
| | 05/28/09 | 3368.12 | 58.70 | 47.47 | 49.18 | 1.71 | Pump | 1 | 19 | 3320.39 |
| | 05/28/09 | 3368.12 | 58.70 | 48.39 | 48.39 | 0.00 | NA | NA | NA | 3319.73 |
| | 06/03/09 | 3368.12 | 58.70 | 47.47 | 49.38 | 1.91 | Pump | 1.5 | 24.5 | 3320.36 |
| | 06/03/09 | 3368.12 | 58.70 | 49.03 | 49.03 | 0.00 | NA | NA | NA | 3319.09 |
| | 06/11/09 | 3368.12 | 58.70 | 47.39 | 49.50 | 2.11 | Pump | 1.5 | 24.5 | 3320.41 |
| | 06/11/09 | 3368.12 | 58.70 | 49.41 | 49.41 | 0.00 | NA | NA | NA | 3318.71 |
| | 06/17/09 | 3368.12 | 58.70 | 47.38 | 49.10 | 1.72 | Pump | 3 | 22 | 3320.48 |
| | 06/17/09 | 3368.12 | 58.70 | 49.25 | 49.25 | 0.00 | NA | NA | NA | 3318.87 |
| | 06/23/09 | 3368.12 | 58.70 | 47.52 | 48.50 | 0.98 | Pump | 1 | 14 | 3320.45 |
| | 06/23/09 | 3368.12 | 58.70 | 49.50 | 49.50 | 0.00 | NA | NA | NA | 3318.62 |
| | 07/01/09 | 3368.12 | 58.70 | 47.41 | 48.60 | 1.19 | Pump | 2 | 13 | 3320.53 |
| | 07/01/09 | 3368.12 | 58.70 | 49.35 | 49.35 | 0.00 | NA | NA | NA | 3318.77 |
| | 07/07/09 | 3368.12 | 58.70 | 47.40 | 48.35 | 0.95 | Pump | 1 | 14 | 3320.58 |
| | 07/07/09 | 3368.12 | 58.70 | 48.94 | 48.94 | 0.00 | NA | NA | NA | 3319.18 |
| | 07/15/09 | 3368.12 | 58.70 | 47.36 | 48.64 | 1.28 | Pump | 3 | 7 | 3320.57 |
| | 07/15/09 | 3368.12 | 58.70 | 48.02 | 48.02 | 0.00 | NA | NA | NA | 3320.10 |
| | 07/29/09 | 3368.12 | 58.70 | 47.34 | 48.31 | 0.97 | Pump | 0.5 | 19.5 | 3320.63 |
| | 08/05/09 | 3368.12 | 58.70 | 47.40 | 48.13 | 0.73 | Pump | 1 | 9 | 3320.61 |
| | 08/05/09 | 3368.12 | 58.70 | 49.45 | 49.45 | 0.00 | NA | NA | NA | 3318.67 |
| | 08/12/09 | 3368.12 | 58.70 | 47.34 | 48.05 | 0.71 | Pump | 1.5 | 18.5 | 3320.67 |
| | 08/12/09 | 3368.12 | 58.70 | 50.35 | 50.35 | 0.00 | NA | NA | NA | 3317.77 |
| | 08/19/09 | 3368.12 | 58.70 | 47.26 | 47.89 | 0.63 | Pump | 0.5 | 14.75 | 3320.77 |
| | 08/19/09 | 3368.12 | 58.70 | 49.05 | 49.05 | 0.00 | NA | NA | NA | 3319.07 |
| | 08/27/09 | 3368.12 | 58.70 | 47.30 | 48.03 | 0.73 | Pump | 0.5 | 14.5 | 3320.71 |
| | 08/27/09 | 3368.12 | 58.70 | 48.10 | 48.10 | 0.00 | NA | NA | NA | 3320.02 |
| | 09/02/09 | 3368.12 | 58.70 | 47.32 | 47.96 | 0.64 | Pump | 1 | 15 | 3320.70 |
| | 09/02/09 | 3368.12 | 58.70 | 48.71 | 48.71 | 0.00 | NA | NA | NA | 3319.41 |
| | 09/09/09 | 3368.12 | 58.70 | 47.31 | 47.93 | 0.62 | Pump | 0.25 | 14.75 | 3320.72 |
| | 09/09/09 | 3368.12 | 58.70 | 48.13 | 48.13 | 0.00 | NA | NA | NA | 3319.99 |
| | 09/16/09 | 3368.12 | 58.70 | 47.36 | 48.01 | 0.65 | Pump | 0.5 | 14.5 | 3320.66 |
| | 09/16/09 | 3368.12 | 58.70 | 49.80 | 49.80 | 0.00 | NA | NA | NA | 3318.32 |
| | 09/23/09 | 3368.12 | 58.70 | 47.31 | 47.96 | 0.65 | Pump | 0.5 | 9.5 | 3320.71 |
| | 09/23/09 | 3368.12 | 58.70 | 47.57 | 47.57 | 0.00 | NA | NA | NA | 3320.55 |
| | 09/23/09 | 3368.12 | 58.70 | 47.42 | 47.44 | 0.02 | Pump | NA | 10 | 3320.70 |
| | 09/23/09 | 3368.12 | 58.70 | 50.13 | 50.13 | 0.00 | NA | NA | NA | 3317.99 |
| | 09/30/09 | 3368.12 | 58.70 | 47.25 | 47.85 | 0.60 | Pump | 0.5 | 9.5 | 3320.78 |
| | 09/30/09 | 3368.12 | 58.70 | 50.20 | 50.20 | 0.00 | NA | AM | NA | 3317.92 |
| | 09/30/09 | 3368.12 | 58.70 | 47.25 | 47.36 | 0.11 | Pump | 0.25 | 9.75 | 3320.85 |
| | 09/30/09 | 3368.12 | 58.70 | 48.70 | 48.70 | 0.00 | NA | PM | NA | 3319.42 |
| | 10/07/09 | 3368.12 | 58.70 | 47.30 | 47.91 | 0.61 | Pump | 0.25 | 9.75 | 3320.73 |
| | 10/07/09 | 3368.12 | 58.70 | 49.08 | 49.08 | 0.00 | NA | AM | NA | 3319.04 |
| | 10/07/09 | 3368.12 | 58.70 | 47.30 | 47.41 | 0.11 | Pump | 0.25 | 9.75 | 3320.80 |
| | 10/07/09 | 3368.12 | 58.70 | 48.92 | 48.92 | 0.00 | NA | PM | NA | 3319.20 |
| | 10/14/09 | 3368.12 | 58.70 | 47.32 | 47.86 | 0.54 | Pump | 0.5 | 9.5 | 3320.72 |
| | 10/14/09 | 3368.12 | 58.70 | 48.96 | 48.96 | 0.00 | NA | PM | NA | 3319.16 |
| | 10/14/09 | 3368.12 | 58.70 | 47.29 | 47.33 | 0.04 | Pump | Sheen | 10 | 3320.82 |
| | 10/14/09 | 3368.12 | 58.70 | 48.57 | 48.57 | 0.00 | NA | PM | NA | 3319.55 |
| | 10/21/09 | 3368.12 | 58.70 | 47.28 | 47.65 | 0.37 | Pump | 0.5 | 9.5 | 3320.78 |

# TABLE 1
## 2009 GROUNDWATER ELEVATION AND PSH RECOVERY DATA
**Plains Pipeline, L.P.**
**SRS # 2003-00117**
**Vacuum to Jal Mainline #3**
**Lea County, New Mexico**

| Well Number | Date Measured | Top of Casing Elevation (ft) | Total Depth (ft) | Depth to Product (ft) | Depth to Water (ft) | PSH Thickness (ft) | Recovery Method | Recovery | | Corrected Groundwater Elevation (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | PSH (gallons) | Water (gallons) | |
| RW-1 | 10/21/09 | 3368.12 | 58.70 | 49.01 | 49.01 | 0.00 | NA | NA | NA | 3319.11 |
| | 10/28/09 | 3368.12 | 58.70 | 47.20 | 47.65 | 0.45 | Pump | 0.25 | 19.75 | 3320.85 |
| | 10/28/09 | 3368.12 | 58.70 | 48.73 | 48.73 | 0.00 | NA | NA | NA | 3319.39 |
| | 11/04/09 | 3368.12 | 58.70 | 47.43 | 48.13 | 0.70 | Pump | 0.5 | 9.5 | 3320.59 |
| | 11/04/09 | 3368.12 | 58.70 | 49.24 | 49.24 | 0.00 | NA | AM | NA | 3318.88 |
| | 11/04/09 | 3368.12 | 58.70 | 47.49 | 47.53 | 0.04 | Pump | NA | 10 | 3320.62 |
| | 11/04/09 | 3368.12 | 58.70 | 48.88 | 48.88 | 0.00 | NA | PM | NA | 3319.24 |
| | 11/11/09 | 3368.12 | 58.70 | 47.46 | 47.96 | 0.50 | Pump | 0.5 | 9.5 | 3320.59 |
| | 11/11/09 | 3368.12 | 58.70 | 49.59 | 49.59 | 0.00 | NA | AM | NA | 3318.53 |
| | 11/11/09 | 3368.12 | 58.70 | 47.45 | 47.51 | 0.06 | Pump | Sheen | 10 | 3320.66 |
| | 11/11/09 | 3368.12 | 58.70 | 48.70 | 48.70 | 0.00 | NA | PM | NA | 3319.42 |
| | 11/18/09 | 3368.12 | 58.70 | 48.31 | 48.76 | 0.45 | Pump | 0.25 | 20 | 3319.74 |
| | 11/18/09 | 3368.12 | 58.70 | 49.45 | 49.45 | 0.00 | NA | NA | NA | 3318.67 |
| | 11/25/09 | 3368.12 | 58.70 | 47.45 | 48.01 | 0.56 | Pump | 0.5 | 9.5 | 3320.59 |
| | 11/25/09 | 3368.12 | 58.70 | 49.30 | 49.30 | 0.00 | NA | NA | NA | 3318.82 |
| | 12/02/09 | 3368.12 | 58.70 | 47.45 | 47.95 | 0.50 | Pump | 0.25 | 9.75 | 3320.60 |
| | 12/02/09 | 3368.12 | 58.70 | 49.30 | 50.66 | 1.36 | NA | NA | NA | 3318.62 |
| | 12/09/09 | 3368.12 | 58.70 | 47.46 | 48.00 | 0.54 | Pump | 0.25 | 20 | 3320.58 |
| | 12/09/09 | 3368.12 | 58.70 | 49.54 | 49.54 | 0.00 | NA | NA | NA | 3318.58 |
| | 12/16/09 | 3368.12 | 58.70 | 47.43 | 48.06 | 0.63 | Pump | 0.5 | 14.5 | 3320.60 |
| | 12/16/09 | 3368.12 | 58.70 | 48.95 | 49.85 | 0.90 | NA | NA | NA | 3319.04 |
| | 12/23/09 | 3368.12 | 58.70 | 47.23 | 47.60 | 0.37 | Pump | 0.5 | 19.5 | 3320.83 |
| | 12/23/09 | 3368.12 | 58.70 | 50.22 | 50.22 | 0.00 | NA | NA | NA | 3317.90 |
| | 12/30/09 | 3368.12 | 58.70 | 47.27 | 47.81 | 0.54 | Pump | 0.25 | 19.75 | 3320.77 |
| | 12/30/09 | 3368.12 | 58.70 | 49.28 | 49.28 | 0.00 | NA | NA | NA | 3318.84 |
| RW-2 | 01/07/09 | 3368.32 | 58.98 | 47.84 | 48.50 | 0.66 | Hand bail | 2 | 8 | 3320.38 |
| | 01/07/09 | 3368.32 | 58.98 | 48.86 | 48.87 | 0.01 | NA | NA | NA | 3319.46 |
| | 01/15/09 | 3368.32 | 58.98 | 47.96 | 48.77 | 0.81 | Pump | 0.5 | 9.5 | 3320.24 |
| | 01/15/09 | 3368.32 | 58.98 | 48.33 | 48.33 | 0.00 | NA | NA | NA | 3319.99 |
| | 01/22/09 | 3368.32 | 58.98 | 47.81 | 48.53 | 0.72 | Pump | 0.5 | 14.5 | 3320.40 |
| | 01/22/09 | 3368.32 | 58.98 | 48.25 | 48.25 | 0.00 | NA | NA | NA | 3320.07 |
| | 01/28/09 | 3368.32 | 58.98 | 47.88 | 48.57 | 0.69 | Pump | 2 | 13 | 3320.34 |
| | 01/28/09 | 3368.32 | 58.98 | 48.29 | 48.29 | 0.00 | NA | NA | NA | 3320.03 |
| | 02/04/09 | 3368.32 | 58.98 | 47.96 | 48.67 | 0.71 | Hand bail | 0.25 | 9.75 | 3320.25 |
| | 02/04/09 | 3368.32 | 58.98 | 48.23 | 48.32 | 0.09 | NA | NA | NA | 3320.08 |
| | 02/11/09 | 3368.32 | 58.98 | 47.96 | 48.83 | 0.87 | Hand bail | 0.75 | 19.25 | 3320.23 |
| | 02/11/09 | 3368.32 | 58.98 | 48.24 | 48.24 | 0.00 | NA | NA | NA | 3320.08 |
| | 02/18/09 | 3368.32 | 58.98 | 47.90 | 48.81 | 0.91 | Pump | 0.25 | 19.75 | 3320.28 |
| | 02/18/09 | 3368.32 | 58.98 | 49.33 | 49.33 | 0.00 | NA | NA | NA | 3318.99 |
| | 02/25/09 | 3368.32 | 58.98 | 47.82 | 48.60 | 0.78 | Pump | 0.5 | 22.5 | 3320.38 |
| | 02/25/09 | 3368.32 | 58.98 | 48.21 | 48.21 | 0.00 | NA | NA | NA | 3320.11 |
| | 03/04/09 | 3368.32 | 58.98 | 47.78 | 48.61 | 0.83 | Pump | 1 | 14 | 3320.42 |
| | 03/11/09 | 3368.32 | 58.98 | 47.90 | 48.81 | 0.91 | NA | NA | NA | 3320.28 |
| | 03/11/09 | 3368.32 | 58.98 | 47.63 | 47.64 | 0.01 | Pump | 1 | 16 | 3320.69 |
| | 03/18/09 | 3368.32 | 58.98 | 47.73 | 48.62 | 0.89 | NA | NA | NA | 3320.46 |
| | 03/18/09 | 3368.32 | 58.98 | 48.09 | 48.09 | 0.00 | Pump | 0.25 | 19.75 | 3320.23 |
| | 03/25/09 | 3368.32 | 58.98 | 47.68 | 48.54 | 0.86 | NA | NA | NA | 3320.51 |
| | 03/25/09 | 3368.32 | 58.98 | 48.33 | 48.34 | 0.01 | Pump | 3 | 19 | 3319.99 |
| | 04/01/09 | 3368.32 | 58.98 | 47.58 | 48.20 | 0.62 | NA | NA | NA | 3320.65 |
| | 04/08/09 | 3368.32 | 58.98 | 47.27 | 48.64 | 1.37 | NA | NA | NA | 3320.84 |
| | 04/08/09 | 3368.32 | 58.98 | 48.18 | 48.18 | 0.00 | Pump | 1 | 19 | 3320.14 |
| | 04/15/09 | 3368.32 | 58.98 | 47.63 | 48.42 | 0.79 | NA | NA | NA | 3320.57 |
| | 04/15/09 | 3368.32 | 58.98 | 49.78 | 49.78 | 0.00 | Pump | 1 | 19 | 3318.54 |
| | 04/22/09 | 3368.32 | 58.98 | 47.61 | 48.69 | 1.08 | NA | NA | NA | 3320.55 |
| | 04/22/09 | 3368.32 | 58.98 | 48.60 | 48.60 | 0.00 | Pump | 1 | 19 | 3319.72 |
| | 04/29/09 | 3368.32 | 58.98 | 47.66 | 48.42 | 0.76 | NA | NA | NA | 3320.55 |
| | 04/29/09 | 3368.32 | 58.98 | 48.14 | 48.14 | 0.00 | Pump | 1 | 19 | 3320.18 |
| | 05/06/09 | 3368.32 | 58.98 | 47.76 | 48.53 | 0.77 | NA | NA | NA | 3320.44 |
| | 05/06/09 | 3368.32 | 58.98 | 48.59 | 48.59 | 0.00 | Pump | 1 | 19 | 3319.73 |
| | 05/14/09 | 3368.32 | 58.98 | 47.90 | 48.76 | 0.86 | NA | NA | NA | 3320.29 |
| | 05/14/09 | 3368.32 | 58.98 | 48.87 | 48.87 | 0.00 | Pump | 1 | 19 | 3319.45 |
| | 05/20/09 | 3368.32 | 58.98 | 47.96 | 48.64 | 0.68 | Pump | 1 | 19 | 3320.26 |
| | 05/28/09 | 3368.32 | 58.98 | 47.92 | 48.73 | 0.81 | NA | NA | NA | 3320.28 |
| | 05/28/09 | 3368.32 | 58.98 | 48.79 | 48.79 | 0.00 | Pump | 1 | 19 | 3319.53 |

# TABLE 1
## 2009 GROUNDWATER ELEVATION AND PSH RECOVERY DATA
**Plains Pipeline, L.P.**
**SRS # 2003-00117**
**Vacuum to Jal Mainline #3**
**Lea County, New Mexico**

| Well Number | Date Measured | Top of Casing Elevation (ft) | Total Depth (ft) | Depth to Product (ft) | Depth to Water (ft) | PSH Thickness (ft) | Recovery Method | Recovery | | Corrected Groundwater Elevation (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | PSH (gallons) | Water (gallons) | |
| RW-2 | 06/03/09 | 3368.32 | 58.98 | 47.88 | 49.01 | 1.13 | NA | NA | NA | 3320.27 |
| | 06/03/09 | 3368.32 | 58.98 | 49.43 | 49.43 | 0.00 | Pump | 1 | 19 | 3318.89 |
| | 06/11/09 | 3368.32 | 58.98 | 47.85 | 48.93 | 1.08 | NA | NA | NA | 3320.31 |
| | 06/11/09 | 3368.32 | 58.98 | 48.90 | 48.90 | 0.00 | Pump | 1 | 19 | 3319.42 |
| | 06/17/09 | 3368.32 | 58.98 | 47.73 | 49.00 | 1.27 | NA | NA | NA | 3320.40 |
| | 06/17/09 | 3368.32 | 58.98 | 48.98 | 48.98 | 0.00 | Pump | 2 | 18 | 3319.34 |
| | 06/23/09 | 3368.32 | 58.98 | 47.82 | 48.62 | 0.80 | NA | NA | NA | 3320.38 |
| | 06/23/09 | 3368.32 | 58.98 | 48.88 | 48.88 | 0.00 | Pump | 1 | 9 | 3319.44 |
| | 07/01/09 | 3368.32 | 58.98 | 47.76 | 48.72 | 0.96 | NA | NA | NA | 3320.42 |
| | 07/01/09 | 3368.32 | 58.98 | 48.72 | 48.72 | 0.00 | Pump | 2 | 13 | 3319.60 |
| | 07/07/09 | 3368.32 | 58.98 | 47.72 | 48.47 | 0.75 | NA | NA | NA | 3320.49 |
| | 07/07/09 | 3368.32 | 58.98 | 49.50 | 49.50 | 0.00 | NA | NA | NA | 3318.82 |
| | 07/15/09 | 3368.32 | 58.98 | 47.68 | 48.76 | 1.08 | Pump | 2 | 8 | 3320.48 |
| | 07/15/09 | 3368.32 | 58.98 | 50.20 | 50.20 | 0.00 | NA | NA | NA | 3318.12 |
| | 07/29/09 | 3368.32 | 58.98 | 47.62 | 48.66 | 1.04 | Pump | 1 | 19 | 3320.54 |
| | 07/29/09 | 3368.32 | 58.98 | 49.10 | 49.10 | 0.00 | NA | NA | NA | 3319.22 |
| | 08/05/09 | 3368.32 | 58.98 | 47.69 | 48.46 | 0.77 | Pump | 1 | 14 | 3320.51 |
| | 08/05/09 | 3368.32 | 58.98 | 50.36 | 50.36 | 0.00 | NA | NA | NA | 3317.96 |
| | 08/12/09 | 3368.32 | 58.98 | 47.65 | 48.34 | 0.69 | Pump | 0.5 | 14.5 | 3320.57 |
| | 08/12/09 | 3368.32 | 58.98 | 48.71 | 48.71 | 0.00 | NA | NA | NA | 3319.61 |
| | 08/19/09 | 3368.32 | 58.98 | 47.61 | 48.07 | 0.46 | Pump | 0.5 | 14.5 | 3320.64 |
| | 08/19/09 | 3368.32 | 58.98 | 49.78 | 49.78 | 0.00 | NA | NA | NA | 3318.54 |
| | 08/27/09 | 3368.32 | 58.98 | 47.64 | 48.14 | 0.50 | Pump | 0.5 | 14.5 | 3320.61 |
| | 08/27/09 | 3368.32 | 58.98 | 48.91 | 48.91 | 0.00 | NA | NA | NA | 3319.41 |
| | 09/02/09 | 3368.32 | 58.98 | 47.65 | 48.16 | 0.51 | Pump | 1 | 14 | 3320.59 |
| | 09/02/09 | 3368.32 | 58.98 | 48.55 | 48.55 | 0.00 | NA | NA | NA | 3319.77 |
| | 09/09/09 | 3368.32 | 58.98 | 47.64 | 48.13 | 0.49 | Pump | 0.25 | 14.75 | 3320.61 |
| | 09/09/09 | 3368.32 | 58.98 | 48.23 | 48.23 | 0.00 | NA | NA | NA | 3320.09 |
| | 09/16/09 | 3368.32 | 58.98 | 47.69 | 48.28 | 0.59 | Pump | 0.5 | 14.5 | 3320.54 |
| | 09/16/09 | 3368.32 | 58.98 | 48.31 | 48.31 | 0.00 | NA | NA | NA | 3320.01 |
| | 09/23/09 | 3368.32 | 58.98 | 47.68 | 48.10 | 0.42 | Pump | 0.5 | 9.5 | 3320.58 |
| | 09/23/09 | 3368.32 | 58.98 | 49.44 | 49.44 | 0.00 | NA | NA | NA | 3318.88 |
| | 09/23/09 | 3368.32 | 58.98 | 47.71 | 47.72 | 0.01 | Pump | 0 | 10 | 3320.61 |
| | 09/23/09 | 3368.32 | 58.98 | 49.80 | 49.80 | 0.00 | NA | NA | NA | 3318.52 |
| | 09/30/09 | 3368.32 | 58.98 | 47.61 | 47.90 | 0.29 | Pump | 0.25 | 9.75 | 3320.67 |
| | 09/30/09 | 3368.32 | 58.98 | 48.52 | 48.52 | 0.00 | NA | NA | NA | 3319.80 |
| | 09/30/09 | 3368.32 | 58.98 | 47.58 | 47.62 | 0.04 | Pump | 0.25 | 9.75 | 3320.73 |
| | 09/30/09 | 3368.32 | 58.98 | 48.75 | 48.75 | 0.00 | NA | NA | NA | 3319.57 |
| | 10/07/09 | 3368.32 | 58.98 | 47.67 | 48.04 | 0.37 | Pump | 0.25 | 9.75 | 3320.59 |
| | 10/07/09 | 3368.32 | 58.98 | 48.72 | 48.72 | 0.00 | NA | NA | NA | 3319.60 |
| | 10/07/09 | 3368.32 | 58.98 | 47.63 | 47.65 | 0.02 | Pump | Sheen | 10 | 3320.69 |
| | 10/07/09 | 3368.32 | 58.98 | 49.14 | 49.14 | 0.00 | NA | NA | NA | 3319.18 |
| | 10/14/09 | 3368.32 | 58.98 | 47.65 | 47.95 | 0.30 | Pump | 0.5 | 9.5 | 3320.63 |
| | 10/14/09 | 3368.32 | 58.98 | 48.96 | 48.96 | 0.00 | NA | NA | NA | 3319.36 |
| | 10/14/09 | 3368.32 | 58.98 | 47.61 | 47.64 | 0.03 | Pump | Sheen | 10 | 3320.71 |
| | 10/14/09 | 3368.32 | 58.98 | 48.75 | 48.75 | 0.00 | NA | NA | NA | 3319.57 |
| | 10/21/09 | 3368.32 | 58.98 | 47.62 | 47.83 | 0.21 | Pump | 0.5 | 9.5 | 3320.67 |
| | 10/21/09 | 3368.32 | 58.98 | 48.62 | 48.62 | 0.00 | NA | NA | NA | 3319.70 |
| | 10/28/09 | 3368.32 | 58.98 | 47.55 | 47.73 | 0.18 | Pump | 0.25 | 19.75 | 3320.74 |
| | 10/28/09 | 3368.32 | 58.98 | 48.98 | 48.98 | 0.00 | NA | NA | NA | 3319.34 |
| | 11/04/09 | 3368.32 | 58.98 | 47.80 | 48.21 | 0.41 | Pump | 0.5 | 9.5 | 3320.46 |
| | 11/04/09 | 3368.32 | 58.98 | 48.33 | 48.33 | 0.00 | am | NA | NA | 3319.99 |
| | 11/04/09 | 3368.32 | 58.98 | 47.81 | 47.83 | 0.02 | Pump | NA | 10 | 3320.51 |
| | 11/04/09 | 3368.32 | 58.98 | 48.86 | 48.86 | 0.00 | pm | NA | NA | 3319.46 |
| | 11/11/09 | 3368.32 | 58.98 | 47.79 | 48.18 | 0.39 | Pump | 0.5 | 9.5 | 3320.47 |
| | 11/11/09 | 3368.32 | 58.98 | 48.92 | 48.92 | 0.00 | am | NA | NA | 3319.40 |
| | 11/11/09 | 3368.32 | 58.98 | 47.76 | 47.80 | 0.04 | Pump | Sheen | 10 | 3320.55 |
| | 11/11/09 | 3368.32 | 58.98 | 48.60 | 48.60 | 0.00 | pm | NA | NA | 3319.72 |
| | 11/18/09 | 3368.32 | 58.98 | 47.65 | 47.85 | 0.20 | Pump | 0.25 | 20 | 3320.64 |
| | 11/18/19 | 3368.32 | 58.98 | 48.58 | 48.58 | 0.00 | NA | NA | NA | 3319.74 |
| | 11/25/09 | 3368.32 | 58.98 | 47.80 | 48.20 | 0.40 | Pump | 0.5 | 9.5 | 3320.46 |
| | 11/25/09 | 3368.32 | 58.98 | 48.38 | 48.38 | 0.00 | NA | NA | NA | 3319.94 |
| | 12/02/09 | 3368.32 | 58.98 | 47.77 | 48.17 | 0.40 | Pump | 0.25 | 19.75 | 3320.49 |
| | 12/02/09 | 3368.32 | 58.98 | 49.67 | 49.67 | 0.00 | NA | NA | NA | 3318.65 |

# TABLE 1
## 2009 GROUNDWATER ELEVATION AND PSH RECOVERY DATA
**Plains Pipeline, L.P.**
**SRS # 2003-00117**
**Vacuum to Jal Mainline #3**
**Lea County, New Mexico**

| Well Number | Date Measured | Top of Casing Elevation (ft) | Total Depth (ft) | Depth to Product (ft) | Depth to Water (ft) | PSH Thickness (ft) | Recovery Method | Recovery | | Corrected Groundwater Elevation (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | PSH (gallons) | Water (gallons) | |
| RW-2 | 12/09/09 | 3368.32 | 58.98 | 47.79 | 48.11 | 0.32 | Pump | 0.25 | 19.75 | 3320.48 |
| | 12/09/09 | 3368.32 | 58.98 | 49.19 | 49.19 | 0.00 | NA | NA | NA | 3319.13 |
| | 12/16/09 | 3368.32 | 58.98 | 47.75 | 48.10 | 0.35 | Pump | Sheen | 10 | 3320.52 |
| | 12/16/09 | 3368.32 | 58.98 | 48.90 | 48.90 | 0.00 | NA | NA | NA | 3319.42 |
| | 12/23/09 | 3368.32 | 58.98 | 47.58 | 47.66 | 0.08 | Pump | 0.25 | 14.75 | 3320.73 |
| | 12/23/09 | 3368.32 | 58.98 | 48.15 | 48.15 | 0.00 | NA | NA | NA | 3320.17 |
| | 12/30/09 | 3368.32 | 58.98 | 47.67 | 47.75 | 0.08 | Pump | Sheen | 15 | 3320.64 |
| | 12/30/09 | 3368.32 | 58.98 | 48.93 | 48.93 | 0.00 | NA | NA | NA | 3319.39 |
| RW-3 | 01/07/09 | 3369.05 | 59.60 | 48.47 | 48.47 | 0.00 | Hand bail | 0 | 10 | 3320.58 |
| | 01/07/09 | 3369.05 | 59.60 | 48.52 | 48.52 | 0.00 | NA | NA | NA | 3320.53 |
| | 01/15/09 | 3369.05 | 59.60 | 48.60 | 48.60 | 0.00 | Pump | 0 | 10 | 3320.45 |
| | 01/15/09 | 3369.05 | 59.60 | 48.79 | 48.79 | 0.00 | NA | NA | NA | 3320.26 |
| | 01/22/09 | 3369.05 | 59.60 | 48.43 | 48.43 | 0.00 | Pump/new sock | 0 | 12 | 3320.62 |
| | 01/22/09 | 3369.05 | 59.60 | 48.49 | 48.49 | 0.00 | NA | NA | NA | 3320.56 |
| | 01/28/09 | 3369.05 | 59.60 | 48.51 | 48.51 | 0.00 | Pump | 0 | 10 | 3320.54 |
| | 01/28/09 | 3369.05 | 59.60 | 48.52 | 48.52 | 0.00 | NA | NA | NA | 3320.53 |
| | 02/04/09 | 3369.05 | 59.60 | 48.56 | 48.56 | 0.00 | Pump | 0 | 10 | 3320.49 |
| | 02/04/09 | 3369.05 | 59.60 | 48.61 | 48.61 | 0.00 | NA | NA | NA | 3320.44 |
| | 02/11/09 | 3369.05 | 59.60 | 48.58 | 48.58 | 0.00 | Pump | 0 | 20 | 3320.47 |
| | 02/11/09 | 3369.05 | 59.60 | 48.72 | 48.72 | 0.00 | NA | NA | NA | 3320.33 |
| | 02/18/09 | 3369.05 | 59.60 | 48.51 | 48.51 | 0.00 | Pump/Sock | 0 | 20 | 3320.54 |
| | 02/18/09 | 3369.05 | 59.60 | 49.71 | 49.71 | 0.00 | NA | NA | NA | 3319.34 |
| | 02/25/09 | 3369.05 | 59.60 | 48.42 | 48.42 | 0.00 | Pump/Flip Sock | 0 | 15 | 3320.63 |
| | 02/25/09 | 3369.05 | 59.60 | 48.56 | 48.56 | 0.00 | NA | NA | NA | 3320.49 |
| | 03/04/09 | 3369.05 | 59.57 | 48.41 | 48.41 | 0.00 | New sock | 0 | 10 | 3320.64 |
| | 03/04/09 | 3369.05 | 59.57 | 48.42 | 48.42 | 0.00 | NA | NA | NA | 3320.63 |
| | 03/11/09 | 3369.05 | 59.57 | 48.54 | 48.54 | 0.00 | Flip Sock | 0 | 10 | 3320.51 |
| | 03/11/09 | 3369.05 | 59.57 | 48.79 | 48.79 | 0.00 | NA | NA | NA | 3320.26 |
| | 03/18/09 | 3369.05 | 59.57 | 48.35 | 48.35 | 0.00 | Pump | 0 | 10 | 3320.70 |
| | 03/18/09 | 3369.05 | 59.57 | 48.74 | 48.74 | 0.00 | NA | NA | NA | 3320.31 |
| | 03/25/09 | 3369.05 | 59.57 | 48.34 | 48.34 | 0.00 | Pump | 0 | 10 | 3320.71 |
| | 03/25/09 | 3369.05 | 59.57 | 48.45 | 48.45 | 0.00 | NA | NA | NA | 3320.60 |
| | 04/01/09 | 3369.05 | 59.57 | 48.15 | 48.15 | 0.00 | NA | NA | NA | 3320.90 |
| | 04/08/09 | 3369.05 | 59.57 | 48.24 | 48.24 | 0.00 | Pump | 0 | 10 | 3320.81 |
| | 04/08/09 | 3369.05 | 59.57 | 48.39 | 48.39 | 0.00 | NA | NA | NA | 3320.66 |
| | 04/15/09 | 3369.05 | 59.57 | 48.36 | 48.36 | 0.00 | NA | NA | NA | 3320.69 |
| | 04/22/09 | 3369.05 | 59.57 | 48.33 | 48.33 | 0.00 | NA | NA | NA | 3320.72 |
| | 04/29/09 | 3369.05 | 59.57 | 48.28 | 48.28 | 0.00 | NA | NA | NA | 3320.77 |
| | 05/06/09 | 3369.05 | 59.57 | 48.32 | 48.32 | 0.00 | NA | NA | NA | 3320.73 |
| | 05/14/09 | 3369.05 | 59.57 | 48.50 | 48.58 | 0.08 | NA | NA | NA | 3320.54 |
| | 05/14/09 | 3369.05 | 59.57 | 49.47 | 49.47 | 0.00 | Pump | 0.25 | 14.75 | 3319.58 |
| | 05/20/09 | 3369.05 | 59.57 | 48.57 | 48.57 | 0.00 | Pump | 0.25 | 14.75 | 3320.48 |
| | 05/28/09 | 3369.05 | 59.57 | 48.60 | 48.60 | 0.00 | NA | NA | NA | 3320.45 |
| | 06/03/09 | 3369.05 | 59.57 | 48.55 | 48.55 | 0.00 | NA | NA | NA | 3320.50 |
| | 06/03/09 | 3369.05 | 59.57 | 48.80 | 48.80 | 0.00 | Pump | 0 | 10 | 3320.25 |
| | 06/11/09 | 3369.05 | 59.57 | 48.51 | 48.51 | 0.00 | NA | NA | NA | 3320.54 |
| | 06/11/09 | 3369.05 | 59.57 | 48.72 | 48.72 | 0.00 | Pump | 0 | 10 | 3320.33 |
| | 06/17/09 | 3369.05 | 59.57 | 48.48 | 48.48 | 0.00 | NA | NA | NA | 3320.57 |
| | 06/23/09 | 3369.05 | 59.57 | 48.50 | 48.53 | 0.03 | NA | NA | NA | 3320.55 |
| | 06/23/09 | 3369.05 | 59.57 | 49.60 | 49.60 | 0.00 | Pump | 1 | 9 | 3319.45 |
| | 07/01/09 | 3369.05 | 59.57 | 48.51 | 48.51 | 0.00 | NA | NA | NA | 3320.54 |
| | 07/07/09 | 3369.05 | 59.57 | 48.35 | 48.35 | 0.00 | New sock | NA | NA | 3320.70 |
| | 07/15/09 | 3369.05 | 59.57 | 48.45 | 48.45 | 0.00 | NA | NA | NA | 3320.60 |
| | 07/29/09 | 3369.05 | 59.57 | 48.30 | 48.30 | 0.00 | NA | NA | NA | 3320.75 |
| | 08/05/09 | 3369.05 | 59.57 | 48.36 | 48.36 | 0.00 | New sock | NA | NA | 3320.69 |
| | 08/12/09 | 3369.05 | 59.57 | 48.26 | 48.26 | 0.00 | Flip Sock | NA | NA | 3320.79 |
| | 08/19/09 | 3369.05 | 59.57 | 48.12 | 48.12 | 0.00 | New sock | NA | NA | 3320.93 |
| | 08/19/09 | 3369.05 | 59.57 | 48.61 | 48.61 | 0.00 | Pump | 0 | 10 | 3320.44 |
| | 08/27/09 | 3369.05 | 59.57 | 48.21 | 48.21 | 0.00 | NA | NA | NA | 3320.84 |
| | 09/02/09 | 3369.05 | 59.57 | 48.19 | 48.19 | 0.00 | NA | NA | NA | 3320.86 |
| | 09/09/09 | 3369.05 | 59.57 | 48.26 | 48.26 | 0.00 | NA | NA | NA | 3320.79 |
| | 09/16/09 | 3369.05 | 59.57 | 48.21 | 48.21 | 0.00 | NA | NA | NA | 3320.84 |
| | 09/23/09 | 3369.05 | 59.57 | 48.27 | 48.27 | 0.00 | Pump | 0 | 10 | 3320.78 |

# TABLE 1
## 2009 GROUNDWATER ELEVATION AND PSH RECOVERY DATA
**Plains Pipeline, L.P.**
**SRS # 2003-00117**
**Vacuum to Jal Mainline #3**
**Lea County, New Mexico**

| Well Number | Date Measured | Top of Casing Elevation (ft) | Total Depth (ft) | Depth to Product (ft) | Depth to Water (ft) | PSH Thickness (ft) | Recovery Method | Recovery | | Corrected Groundwater Elevation (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | PSH (gallons) | Water (gallons) | |
| RW-3 | 09/23/09 | 3369.05 | 59.57 | 49.25 | 49.25 | 0.00 | NA | NA | NA | 3319.80 |
| | 09/30/09 | 3369.05 | 59.57 | 48.12 | 48.12 | 0.00 | NA | NA | NA | 3320.93 |
| | 10/07/09 | 3369.05 | 59.57 | 48.25 | 48.25 | 0.00 | NA | NA | NA | 3320.80 |
| | 10/21/09 | 3369.05 | 59.57 | 48.10 | 48.10 | 0.00 | NA | NA | NA | 3320.95 |
| | 10/28/09 | 3369.05 | 59.57 | 48.12 | 48.12 | 0.00 | NA | NA | NA | 3320.93 |
| | 11/04/09 | 3369.05 | 59.57 | 48.29 | 48.30 | 0.01 | Pump | 0 | 10 | 3320.76 |
| | 11/04/09 | 3369.05 | 59.57 | 48.55 | 48.55 | 0.00 | NA | NA | NA | 3320.50 |
| | 11/11/09 | 3369.05 | 59.57 | 48.30 | 48.33 | 0.03 | Pump | Sheen | 10 | 3320.75 |
| | 11/11/09 | 3369.05 | 59.57 | 48.52 | 48.52 | 0.00 | NA | NA | NA | 3320.53 |
| | 11/18/09 | 3369.05 | 59.57 | 48.14 | 48.15 | 0.01 | Pump | Sheen | 15 | 3320.91 |
| | 11/18/09 | 3369.05 | 59.57 | 48.64 | 48.64 | 0.00 | NA | NA | NA | 3320.41 |
| | 11/25/09 | 3369.05 | 59.57 | 48.29 | 48.37 | 0.08 | Pump | Sheen | 10 | 3320.75 |
| | 11/25/09 | 3369.05 | 59.57 | 48.88 | 48.88 | 0.00 | NA | NA | NA | 3320.17 |
| | 12/02/09 | 3369.05 | 59.57 | 48.30 | 48.35 | 0.05 | Pump | Sheen | 10 | 3320.74 |
| | 12/09/09 | 3369.05 | 59.57 | 48.93 | 48.93 | 0.00 | NA | NA | NA | 3320.12 |
| | 12/09/09 | 3369.05 | 59.57 | 48.91 | 48.96 | 0.05 | Pump | Sheen | 10 | 3320.13 |
| | 12/09/09 | 3369.05 | 59.57 | 51.18 | 51.18 | 0.00 | NA | NA | NA | 3317.87 |
| | 12/16/09 | 3369.05 | 59.57 | 48.24 | 48.31 | 0.07 | Pump | Sheen | 15 | 3320.80 |
| | 12/16/09 | 3369.05 | 59.57 | 49.10 | 49.10 | 0.00 | NA | NA | NA | 3319.95 |
| | 12/23/09 | 3369.05 | 59.57 | 48.34 | 48.44 | 0.10 | Pump | Sheen | 10 | 3320.70 |
| | 12/23/09 | 3369.05 | 59.57 | 48.71 | 48.71 | 0.00 | NA | NA | NA | 3320.34 |
| | 12/30/09 | 3369.05 | 59.57 | 48.12 | 48.20 | 0.08 | Pump | Sheen | 10 | 3320.92 |
| | 12/30/09 | 3369.05 | 59.57 | 48.66 | 48.66 | 0.00 | NA | NA | NA | 3320.39 |

NA: Not Applicable
NG: Not Gauged
ND: Not Detected

# TABLE 2

Historical Groundwater Elevation Data

*(Available on CD attached to back cover)*

# TABLE 3
## GROUNDWATER SAMPLE ANALYTICAL RESULTS
**Plains Pipeline, L.P.**
**SRS No. 2003-00117**
**Vacuum to Jal Mainline #3**
**Lea County, New Mexico**

| Well Number | Sample Date | Sample ID | SW 846-8021B | | | |
|---|---|---|---|---|---|---|
| | | | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L) |
| | | | NMOCD Remediation Criteria | | | |
| | | | **0.010** | **0.750** | **0.750** | **0.620** |
| MW-2 | 03/28/06 | T13037-1 | **0.243** | 0.00750 | 0.04570 | 0.09390 |
| MW-2 | 06/15/06 | T13863-1 | **0.333** | 0.0033 J | 0.01960 | 0.01040 |
| MW-2 | 09/12/06 | T14672-1 | **0.178** | <0.00020 | 0.01780 | 0.00940 |
| MW-2 | 12/06/06 | T15622-1 | **0.214**[a] | <0.00020 | 0.01850 | 0.00800 |
| MW-2 | 02/28/07 | T16496-1 | **0.186**[a] | <0.00020 | 0.01410 | 0.00150 |
| MW-2 | 05/30/07 | T17641-1 | **0.270**[a] | <0.00023 | 0.01880 | 0.00290 |
| MW-2 | 09/07/07 | T18808-1 | 0.00210 | <0.00023 | <0.00035 | 0.00680 |
| MW-2 | 11/13/07 | T19744-1 | <0.0005 | <0.0005 | <0.0005 | <0.001 |
| MW-2 | 02/28/08 | T21043-1 | <0.00021 | <0.00023 | <0.00035 | 0.0015 J |
| MW-2 | 05/20/08 | T22267-2 | **0.278**[a] | <0.00023 | 0.03200 | 0.00069 J |
| MW-2 | 08/20/08 | T23512-1 | **0.01080** | <0.0005 | <0.0005 | <0.001 |
| MW-2 | 11/20/08 | 180209 | **0.176** | <0.00100 | 0.00630 | <0.00100 |
| MW-2 | 02/18/09 | 9021907 | **0.117** | <0.00100 | <0.00100 | <0.00100 |
| MW-2 | 05/20/09 | 9052216 | **0.0357** | <0.000188 | 0.000500 J | <0.000163 |
| MW-2 | 08/27/09 | 9083116 | **0.0172** | <0.000188 | 0.00110 | <0.000163 |
| MW-2 | 11/18/09 | 215423 | 0.0007 J | <0.000332 | <0.00023 | <0.000143 |
| | | | | | | |
| MW-3 | 03/28/06 | T13037-2 | **0.501** | 0.07580 | 0.05180 | 0.06270 |
| MW-3 | 06/15/06 | T13863-2 | **0.432** | <0.0018 | 0.06030 | 0.04530 |
| MW-3 | 09/12/06 | T14672-2 | **0.0612** | <0.00020 | 0.00490 | <0.00036 |
| MW-3 | 12/06/06 | T15622-2 | **0.190**[a] | 0.00110 | 0.02470 | 0.00360 |
| MW-3 | 02/28/07 | T16496-2 | **0.05830** | 0.00054 J | 0.00520 | 0.00360 |
| MW-3 | 05/30/07 | T17641-2 | **0.05620** | <0.00023 | 0.00410 | <0.00055 |
| MW-3 | 09/07/07 | T18808-2 | <0.00021 | <0.00023 | 0.00790 | <0.00055 |
| MW-3 | 11/13/07 | T19744-2 | <0.0005 | <0.0005 | <0.0005 | <0.001 |
| MW-3 | 02/28/08 | T21043-2 | <0.00021 | <0.00023 | <0.00035 | <0.00055 |
| MW-3 | 05/20/08 | T22267-3 | **0.748**[a] | 0.0003 J | 0.06190 | 0.00084 J |
| MW-3 | 08/20/08 | T23512-2 | **0.0459** | <0.0005 | 0.0021 | <0.001 |
| MW-3 | 11/20/08 | 180210 | **0.0575** | 0.0268 | 0.0152 | 0.0875 |
| MW-3 | 02/18/09 | 9021907 | 0.0070 | 0.0025 | <0.00100 | <0.00100 |
| MW-3 | 05/20/09 | 9052216 | **0.1660** | 0.1820 | 0.1050 | 0.2120 |
| MW-3 | 08/27/09 | 9083116 | 0.0096 | 0.0248 | 0.0123 | 0.0189 |
| MW-3 | 11/18/09 | 215424 | 0.0096 | 0.00700 | 0.0115 | 0.0184 |
| | | | | | | |
| MW-4 | 03/28/06 | T13037-3 | <0.00038 | <0.00036 | <0.00035 | <0.00072 |
| MW-4 | 06/15/06 | T13863-3 | <0.00038 | <0.00036 | <0.00035 | <0.00072 |
| MW-4 | 09/12/06 | T14672-3 | <0.00035 | <0.00020 | <0.00033 | <0.00036 |
| MW-4 | 12/06/06 | T15622-3 | <0.00035 | <0.00020 | <0.00033 | <0.00036 |
| MW-4 | 02/28/07 | T16496-3 | <0.00035 | <0.00020 | <0.00033 | <0.00036 |
| MW-4 | 05/30/07 | T17641-3 | <0.00021 | <0.00023 | <0.00035 | <0.00055 |
| MW-4 | 09/07/07 | T18808-3 | <0.00021 | <0.00023 | <0.00035 | <0.00055 |
| MW-4 | 11/13/07 | T19744-3 | <0.0005 | <0.0005 | <0.0005 | <0.001 |
| MW-4 | 02/28/08 | T21043-3 | <0.00021 | <0.00023 | <0.00035 | <0.00055 |
| MW-4 | 05/20/08 | T22267-4 | <0.00021 | <0.00023 | <0.00035 | <0.00055 |
| MW-4 | 08/20/08 | T23512-3 | <0.0005 | <0.0005 | <0.0005 | <0.001 |
| MW-4 | 11/20/08 | 180211 | <0.00100 | <0.00100 | <0.00100 | <0.00100 |
| MW-4 | 02/18/09 | 9021907 | <0.00100 | <0.00100 | <0.00100 | <0.00100 |
| MW-4 | 05/20/09 | 9052216 | <0.000149 | <0.000188 | <0.000178 | <0.000163 |
| MW-4 | 08/27/09 | 9083116 | <0.000149 | <0.000188 | <0.000178 | <0.000163 |
| MW-4 | 11/18/09 | 215425 | <0.000160 | <0.000332 | <0.000230 | <0.000143 |
| | | | | | | |
| MW-5 | 03/28/06 | T13037-4 | <0.00038 | <0.00036 | <0.00035 | <0.00072 |
| MW-5 | 06/15/06 | T13863-4 | <0.00038 | <0.00036 | <0.00035 | <0.00072 |
| MW-5 | 09/12/06 | T14672-4 | <0.00035 | <0.00020 | <0.00033 | <0.00036 |

# TABLE 3
## GROUNDWATER SAMPLE ANALYTICAL RESULTS
**Plains Pipeline, L.P.**
**SRS No. 2003-00117**
**Vacuum to Jal Mainline #3**
**Lea County, New Mexico**

| Well Number | Sample Date | Sample ID | SW 846-8021B | | | |
|---|---|---|---|---|---|---|
| | | | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L) |
| | | | NMOCD Remediation Criteria | | | |
| | | | **0.010** | **0.750** | **0.750** | **0.620** |
| MW-5 | 12/06/06 | T15622-4 | <0.00035 | <0.00020 | <0.00033 | <0.00036 |
| MW-5 | 02/28/07 | T16496-4 | <0.00035 | <0.00020 | <0.00033 | <0.00036 |
| MW-5 | 05/30/07 | T17641-4 | <0.00021 | <0.00023 | <0.00035 | <0.00055 |
| MW-5 | 09/07/07 | T18808-4 | <0.00021 | <0.00023 | <0.00035 | <0.00055 |
| MW-5 | 11/13/07 | T19744-4 | <0.0005 | <0.0005 | <0.0005 | <0.001 |
| MW-5 | 02/28/08 | T21043-4 | <0.00021 | <0.00023 | 0.00210 | <0.00055 |
| MW-5 | 05/20/08 | T22267-5 | 0.00120 | <0.00023 | <0.00035 | <0.00055 |
| MW-5 | 08/20/08 | T23512-4 | <0.0005 | <0.0005 | <0.0005 | <0.001 |
| MW-5 | 11/20/08 | 180212 | <0.00100 | <0.00100 | <0.00100 | <0.00100 |
| MW-5 | 02/18/09 | 9021907 | <0.00100 | <0.00100 | <0.00100 | <0.00100 |
| MW-5 | 05/20/09 | 9052216 | <0.000149 | <0.000188 | <0.000178 | <0.000163 |
| MW-5 | 08/27/09 | 9083116 | <0.000149 | <0.000188 | <0.000178 | <0.000163 |
| MW-5 | 11/18/09 | 215426 | <0.000160 | <0.000332 | <0.000230 | <0.000143 |
| | | | | | | |
| MW-6 | 03/28/06 | T13037-5 | <0.00038 | <0.00036 | <0.00035 | <0.00072 |
| MW-6 | 06/15/06 | T13863-5 | <0.00038 | <0.00036 | <0.00035 | <0.00072 |
| MW-6 | 09/12/06 | T14672-5 | <0.00035 | <0.00020 | <0.00033 | <0.00036 |
| MW-6 | 12/06/06 | T15622-5 | <0.00035 | <0.00020 | <0.00033 | <0.00036 |
| MW-6 | 02/28/07 | T16496-5 | <0.00035 | <0.00020 | <0.00033 | <0.00036 |
| MW-6 | 05/30/07 | T17641-5 | <0.00021 | <0.00023 | <0.00035 | <0.00055 |
| MW-6 | 09/07/07 | T18808-5 | <0.00021 | <0.00023 | <0.00035 | <0.00055 |
| MW-6 | 11/13/07 | T19744-5 | <0.0005 | <0.0005 | <0.0005 | <0.001 |
| MW-6 | 02/28/08 | T21043-5 | <0.00021 | <0.00023 | <0.00035 | <0.00055 |
| MW-6 | 05/20/08 | T22267-8 | <0.00021 | <0.00023 | <0.00035 | <0.00055 |
| MW-6 | 08/20/08 | T23512-5 | <0.0005 | <0.0005 | <0.0005 | <0.001 |
| MW-6 | 11/20/08 | 180213 | <0.00100 | <0.00100 | <0.00100 | <0.00100 |
| MW-6 | 02/18/09 | 9021907 | <0.00100 | <0.00100 | <0.00100 | <0.00100 |
| MW-6 | 05/20/09 | 9052216 | <0.000149 | <0.000188 | <0.000178 | 0.000200 J |
| MW-6 | 08/27/09 | 9083116 | <0.000149 | <0.000188 | <0.000178 | <0.000163 |
| MW-6 | 11/18/09 | 215427 | <0.000160 | <0.000332 | <0.000230 | <0.000143 |
| | | | | | | |
| MW-7 | 03/28/06 | T13037-6 | <0.00038 | <0.00036 | <0.00035 | <0.00072 |
| MW-7 | 06/15/06 | T13863-6 | <0.00038 | <0.00036 | <0.00035 | <0.00072 |
| MW-7 | 09/12/06 | T14672-6 | <0.00035 | <0.00020 | <0.00033 | <0.00036 |
| MW-7 | 12/06/06 | T15622-6 | <0.00035 | <0.00020 | <0.00033 | <0.00036 |
| MW-7 | 02/28/07 | T16496-6 | <0.00035 | <0.00020 | <0.00033 | <0.00036 |
| MW-7 | 05/30/07 | T17641-6 | <0.00021 | <0.00023 | <0.00035 | <0.00055 |
| MW-7 | 09/07/07 | T18808-6 | <0.00021 | <0.00023 | <0.00035 | <0.00055 |
| MW-7 | 11/13/07 | T19744-6 | <0.0005 | <0.0005 | <0.0005 | <0.001 |
| MW-7 | 02/28/08 | T21043-6 | <0.00021 | <0.00023 | <0.00035 | <0.00055 |
| MW-7 | 05/20/08 | T22267-7 | 0.00650 | <0.00023* | 0.00060 J* | <0.00055* |
| MW-7 | 08/20/08 | T23512-6 | 0.00110 | <0.0005 | <0.0005 | <0.001 |
| MW-7 | 11/20/08 | 180214 | <0.00100 | <0.00100 | <0.00100 | <0.00100 |
| MW-7 | 02/18/09 | 187838 | <0.00100 | <0.00100 | <0.00100 | <0.00100 |
| MW-7 | 05/20/09 | 9052216 | <0.000149 | <0.000188 | <0.000178 | <0.000163 |
| MW-7 | 08/27/09 | 9083116 | <0.000149 | <0.000188 | <0.000178 | <0.000163 |
| MW-7 | 11/18/09 | 215428 | <0.000160 | <0.000332 | <0.000230 | <0.000143 |
| | | | | | | |

< = Not Detected
J = Indicates an estimated valu
U= Not Detected. The analyte is not detected above the SDI
Concentration in **Bold** = above NMOCD Remediation Criteri
[a] = Results from run 2; DF - 5
* Values reported from Run #2 as carry over was reported in Run #1.

# TABLE 4
# BTEX GROUNDWATER SAMPLE ANALYTICAL RESULTS for wells with PSH/Sheen

**Plains Pipeline, L.P.**
**SRS No. 2003-00117**
**Vacuum to Jal Mainline #3**
**Lea County, New Mexico**

| Well Number | Sample Date | Sample ID | SW 846-8021B | | | |
|---|---|---|---|---|---|---|
| | | | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L) |
| | | | NMOCD Remediation Criteria | | | |
| | | | 0.01 mg/L | 0.75 mg/L | 0.75 mg/L | 0.62 mg/L |
| MW-1 | 5/20/2008 | T22267-1 | **4.360** | **1.470** | **0.801** | **1.200** |
| MW-1 | 5/20/2009 | 9052216 | **3.420** | 0.0278 J | 0.603 | **0.642** |
| | | | | | | |
| RW-1 | 5/20/2008 | T22267-6 | **1.2** | 0.6030 | 0.283 | 0.5410 |
| RW-1 | 5/20/2009 | 9052216 | **0.263** | 0.1050 | 0.0636 | 0.1430 |
| | | | | | | |
| RW-2 | 5/20/2008 | T22267-10 | **0.0628** | 0.0568 | 0.059 | 0.1120 |
| RW-2 | 5/20/2009 | 9052216 | **0.276** | 0.0184 | 0.140 | 0.2500 |
| | | | | | | |
| RW-3 | 5/20/2008 | T22267-9 | **2.17** | 0.2390 | 0.403 | 0.3450 |
| RW-3 | 5/20/2009 | 9052216 | **0.834** | 0.0437 | 0.122 | 0.1420 |

Concentrations in **bold** indicate regulatory limit exceedance
J = Indicates an estimated value above the method detection limit (MDL)

# TABLE 5
## GROUNDWATER ANALYTICAL RESULTS for
## POLYNUCLEAR AROMATIC HYDROCARBONS (PAHs) from wells with PSH/Sheen
**Plains Pipeline, L.P.**
**SRS No. 2003-00117**
**Vacuum to Jal Mainline #3**
**Lea County, New Mexico**

| Monitoring Well | Sample Date | Lab Report # | Acenaphthylene | Acenaphthene | Flourene | Indeno(1,2,3-cd)pyrene | Phenanthrene | Anthracene | Fluoranthene | Pyrene | Benzo[a]-anthracene | Chrysene | Benzo[b]-fluoranthene | Benzo[a]-pyrene | Dibenzofuran | Dibenz[a,h]-anthracene | Benzo[g,h,i]-perylene | Benzo(k)fluoranthene | Naphthalene | 1-Methylnaphthalene | 2-Methylnaphthalene | Total naphthalenes | TPH-GRO (C6-C10) | TPH (C10-C28) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Units** | | | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (mg/L) | (mg/L) |
| **Other regulatory limits (Tap Water*)** | | | | 365 | 243 | 0.91 | 1100 | 1830 | 1460 | 183 | 0.91 | 29.1 | 0.91 | 0.7** | | 0.091 | | 9.1 | | | | 30** | | |
| MW-1 | 5/20/2008 | T22301-1 | <16 | <15 | 35.5 J | <24 | 39.7 J | <18 | <16 | <11 | <14 | <13 | <15 | <16 | NA | <13 | <25 | <16 | **150** | NA | 28.5 | **178.5** | 41.5 | 137 |
| MW-1 | 5/20/2009 | 9052216 | <0.0717 | <0.133 | 2.02 | <0.0812 | 2.68 | <0.0819 | <0.0892 | <0.0465 | <0.0307 | <0.0926 | <0.0640 | <0.0513 | 3.03 | <0.0566 | <0.0637 | <0.0776 | 26 | 24.4 | 20.1 | **70.5** | 6.82 | 17.8 |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| RW-1 | 5/20/2008 | T22301-2 | <1.6 | <1.5 | 5.1 | <2.4 | 4.1 J | <1.8 | <1.6 | <1.1 | <1.4 | <1.3 | <1.5 | <1.6 | NA | <1.3 | <2.5 | <1.6 | **34.5** | NA | **37.1** | **71.6** | 15.6 | 9.76 |
| RW-1 | 5/20/2009 | 9052216 | <0.756 | <1.40 | <0.560 | <0.856 | 68.3 | <0.863 | <0.940 | <0.490 | <0.323 | <0.975 | <0.674 | <0.541 | 51.9 | <0.596 | <0.671 | <0.818 | **205a** | 425 | **449a** | **1079** | 2.22 | 60.8 |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| RW-2 | 5/20/2008 | T22301-3 | <1.6 | <1.5 | <2.1 | <2.4 | <1.6 | <1.8 | <1.6 | <1.1 | <1.4 | <1.3 | <1.5 | <1.6 | NA | <1.3 | <2.5 | <1.6 | 4.8 J | NA | 4.3 J | 9.1 | 1.28 | 0.737 |
| RW-2 | 5/20/2009 | 9052216 | <0.355 | <0.657 | <0.263 | <0.402 | 8.6 | <0.406 | <0.442 | <0.230 | <0.152 | <0.458 | <0.317 | <0.254 | 6.7 | <0.280 | <0.315 | <0.384 | 25.7 | 43.7 | **44.2** | **113.6** | 2.81 | 56.5 |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| RW-3 | 5/20/2008 | T22301-4 | <1.6 | <1.5 | <2.1 | <2.4 | <1.6 | <1.8 | <1.6 | <1.1 | <1.4 | <1.3 | <1.5 | <1.6 | NA | <1.3 | <2.5 | <1.6 | 23.1 | NA | 20.1 | **43.2** | 15.5 | 2.92 |
| RW-3 | 5/20/2009 | 9052216 | <0.0703 | <0.130 | 0.63 | <0.0797 | 0.77 | <0.0803 | <0.0875 | <0.0456 | <0.0301 | <0.0908 | <0.0627 | <0.0503 | 0.877 | <0.0555 | <0.0624 | <0.0761 | 6.11 | 6.41 | 4.23 | 16.75 | 1.56 J | <0.876 |

< = Not Detected
J = Indicates an estimated value above the method detection limit (MDL)
Tap Water* = NMED Tap Water Soil screening levels for residential scenarios.
** = NM Water Quality Standard
U= Not Detected. The analyte is not detected above the SDL.
Concentrations in **bold** indicate regulatory limit exceedance
[a]Estimated concentration value greater than standard range.
[b]Estimated concentration value greater than standard range.
NA - Not requested for analysis
Total naphthalenes also include monomethylnaphthalenes.

# TABLE 6
## 2009 MONTHLY PSH AND DISSOLVED PHASE GROUNDWATER RECOVERY DATA
**Plains Pipeline, L.P.**
**SRS # 2003-00117**
**Vacuum to Jal Mainline #3**
**Lea County, New Mexico**

| Month | Volume of PSH recovered in gallons | Volume of dissolved phase groundwater recovered in gallons |
|---|---|---|
| January | 21.05 | 168.95 |
| February | 10.75 | 232.25 |
| March | 11.75 | 192.25 |
| April | 10.75 | 179.75 |
| May | 8.00 | 162.00 |
| June | 13.00 | 179.00 |
| July | 11.50 | 103.50 |
| August | 6.00 | 124.25 |
| September | 5.75 | 175.25 |
| October | 3.25 | 156.75 |
| November | 3.50 | 222.00 |
| December | 2.50 | 272.75 |
| Total | 107.80 | 2168.70 |

# APPENDIX C

## 2009 Analytical Laboratory Reports

***(Available on CD attached to back cover)***

**1st Quarter 2009 Analytical Reports – 9021907**

**2nd Quarter 2009 Analytical Reports – 9052216**

**3rd Quarter 2009 Analytical Reports – 9083116**

**4th Quarter 2009 Analytical Reports – 9112013**

# APPENDIX D

## C-141 NMOCD Release Notification Form

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, LP | Contact | Daniel Bryant |
| Address | P.O. Box 3119 – Midland, Tx 79702 | Telephone No. | (432) 557-5865 |
| Facility Name | Vacuum to Jal 14" Mainline #3 | Facility Type | Pipeline |

| Surface Owner | Mineral Owner | Lease No. |
|---|---|---|
| Bill Stevens | | |

## LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|---|---|---|---|---|---|---|---|---|
| A | 35 | 21S | 37E | | | | | Lea |

**Latitude** N 32° 26' 32.67" **Longitude** W 103° 7' 36.885"

## NATURE OF RELEASE

| | | |
|---|---|---|
| Type of Release: Sour Crude Oil | Volume of Release: 3+ bbls | Volume Recovered: 0 bbls |
| Source of Release: 14" steel transmission pipeline | Date and Hour of Occurrence: 05/08/2003 14:00 | Date and Hour of Discovery: 05/08/2003 14:30 |
| 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. | |

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
While de-oiling the 14" Vacuum to Jal Mainline, a release was discovered by Brentco Air Patrol. The pipeline was clamped to mitigate the release.

*** The release was initially reported as a 3 bbl release but during delineation activities on 9/12/05, phase-separated hydrocarbons (PSH) was found on the water table. The actual release volume is unknown.

Describe Area Affected and Cleanup Action Taken.* .
Impacted soil and groundwater will be remediated per NMOCD guidelines.
Three monitoring wells have been set to facilitate PSH recovery and groundwater monitoring.

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: Daniel Bryant | OIL CONSERVATION DIVISION | |
| Printed Name: Daniel Bryant | Approved by District Supervisor: | |
| Title: Environmental R/C Specialist | Approval Date: | Expiration Date: |
| E-mail Address: dmbryant@paalp.com | Conditions of Approval: | Attached ☐ |
| Date: 9/26/05 Phone: (432) 557-5865 | | |

* Attach Additional Sheets If Necessary