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Annual GW Mon. REPORTS

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Environmental Bureau
Oil Conservation Division

2009 ANNUAL GROUNDWATER MONITORING REPORT

Livingston Ridge to Hugh - P. Sims
NE ¼ of the SE ¼ of Section 3, Township 21 South, Range 37 East
Plains Pipeline SRS Number 2001-11005
Lea County, New Mexico
NMOCD File Number IR-0398

Terracon Project Number A4077008

January 8, 2010

Prepared for:

Plains Pipeline, L.P.
2530 State Highway 214
Denver City, Texas 79323

Prepared by:

Terracon

Midland, Texas

Terracon

January 8, 2010

Plains Pipeline, L.P.
2530 State Highway 214
Denver City, Texas 79323
Attn: Mr. Jason Henry

Telephone: (806) 592-8305
Fax: (806) 592-7479

Re: 2009 Annual Groundwater Monitoring Report
Livingston Ridge to Hugh - P. Sims
NE ¼ of the SE ¼, Section 3, T21S, R37E
Lea County, New Mexico
NMOCD File Number IR – 0398
Plains Pipeline, L.P. SRS Number 2001-11005
Terracon Project Number A4077008

Dear Mr. Henry:

Terracon is pleased to submit four copies of the 2009 Annual Groundwater Monitoring Report for the above referenced site.

We appreciate the opportunity to perform these services for Plains Pipeline, L.P. Please contact either of the undersigned at (432) 684-9600 if you have questions regarding the information provided in the report.

Sincerely,
Terracon

Prepared by:

Catharine London, P. G.
Senior Project Manager

Reviewed by:

Barrett W. Bole, P. G.
Senior Associate

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Terracon

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NE ¼ of the SE ¼ of Section 3, T21S, R37E
Plains SRS Number 2001-11005
Lea County, New Mexico
NMOCD File Number IR – 0398

Terracon Project Number A4077008

1.0 INTRODUCTION

1.1 Site Description

Site Name	Livingston Ridge to Hugh - P. Sims
Site Location	Approximately 5 miles north-northeast of Eunice, Lea County, New Mexico on Loop 207.
General Site Description	Pipeline right-of-way surrounded by native pasture land, in close proximity of the Carbon Black Plant.

A topographic map is included as Figure 1 and a site plan is included as Figure 2 of Appendix A.

On June 22, 2001, a release of six barrels of crude oil was reported to the New Mexico Oil Conservation District (NMOCD). Initial excavation activities were reportedly conducted by Environmental Plus, Inc. (EPI) in an effort to stockpile saturated soils and expose the leak origin in order to repair the pipeline. The pipeline excavation activities continued during July 2001. A total of approximately 148 cubic yards of hydrocarbon impacted soil were excavated at the site and transported to EPI's landfarm south of Eunice, New Mexico. A temporary groundwater monitoring well (TMW-1) was installed in the bottom of the excavation. Phase-separated hydrocarbons (PSH) were detected on the groundwater surface and the NMOCD and landowner reportedly were immediately notified of the release. EPI installed three groundwater monitoring wells at the site to determine the extent and magnitude of the release and determine the groundwater gradient.

Environmental Technology Group, Inc. (ETGI), assumed control of remedial activities in August 2002 and installed twelve additional groundwater monitor wells at the site. These wells were installed to complete the delineation activities initiated by EPI. At the time of ETGI's investigation, the groundwater monitor wells had adequately delineated the dissolved phase plume and PSH plume at the site.

Plains appointed EPI to take over the remediation and sampling activities in 2004. Terracon assumed consulting duties on February 1, 2007. Available files for this site were given to Terracon at this time.

In July 2007, Terracon oversaw the installation of a PVC liner on the floor of the excavation and backfilling the excavation with remediated soils from the previous land treatment area at the site in accordance with the NMOCD approved work plan. Details of these activities can be found in Plains Soil Closure Compliance Report dated August 17, 2007.

1.2 Scope of Work

Terracon's scope of work included assuming oversight of remedial activities on February 1, 2007. Oversight activities included the preparation of 2006, 2007 and 2008 Annual Groundwater Monitoring Reports for submittal to the NMOCD. Four quarterly groundwater monitoring and sampling events were conducted during 2009 by Terracon. The events were performed on February 9, 2009, May 14 and 15, 2009, August 12 and 13, 2009 and November 10 and 11, 2009 at the Livingston Ridge to Hugh - P. Sims site located in Lea County, New Mexico.

The objective of the quarterly sampling events was to gauge the fifteen groundwater monitor wells (MW-1 through MW-15) and temporary monitor well (TMW-1), which is currently located in the center of the former excavation, and to collect samples of groundwater from each well for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) (quarterly), and total petroleum hydrocarbons (TPH) and polycyclic aromatic hydrocarbons (PAHs), (annually). TPH and PAH samples were collected from all sixteen of the wells on February 9, 2009.

At the direction of the NMOCD, Plains began conducting annual sampling of all monitor wells, even wells containing PSH, for TPH, BTEX and PAHs annually in 2009 and BTEX for the remainder of the three quarterly sampling events.

1.3 Standard of Care

Terracon was awarded this project on February 1, 2007. Activities prior to February 1, 2007 were performed by previous consultant hired by Plains. Terracon makes no assumptions or warranties regarding the previous consultants services being performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, either express or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies or other third parties supplying information used in the preparation of the report.

1.4 Additional Scope Limitations

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, non-detectable or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this remediation activities. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

1.5 Reliance

This report has been prepared for the exclusive use of Plains Pipeline, L. P., and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of Plains Pipeline, L.P. and Terracon. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in this report, and Terracon's Terms and Conditions. The limitation of liability defined in the terms and conditions is the aggregate limit of Terracon's liability to the client and all relying parties unless otherwise agreed in writing.

2.0 FIELD ACTIVITIES

2.1 Groundwater Monitoring and Sampling

Quarterly monitoring and sampling events were performed on February 9, 2009, May 14 and 15, 2009, August 12 and 13, 2009 and November 10 and 11, 2009 by Terracon. Figure 1 presents the general boundaries and topography of the site on portions of the USGS topographic quadrangle map of Hobbs Southwest, New Mexico (Appendix A). Figure 2 is a site plan that indicates the approximate locations of the monitor wells in relation to the pertinent features, structures and general site boundaries (Appendix A).

Monitoring wells were gauged to determine the depth to groundwater and to check for the presence of PSH. Based on the gauging data, PSH was present during 2009 in monitor wells MW-1(from non-detect to 0.04 feet), MW-5 (from non-detect to 0.01 feet), and temporary monitor well TMW-1

(at thicknesses ranging from a 0.02 feet to 2.32 feet). Groundwater gradient maps for each quarter are included as Figures 3 through 6 (Appendix A). Gauging data is included in Appendix B as Table 1.

A groundwater sample was collected and analyzed from each of the fifteen groundwater monitor wells and temporary monitor well TMW-1 during the February 2009 sampling event. Groundwater samples were not collected in from wells containing PSH or wells that were on the sample reduction program in May, August and November 2009. Prior to sample collection, each of these monitor wells was micro-purged until consistent values (i.e., less than 10% variance between consecutive readings) were obtained for pH, temperature and conductivity. Following purging, a groundwater sample was collected directly from polyethylene tubing attached to the downhole pump.

Groundwater samples were placed in laboratory-supplied containers appropriate to the analyses requested and placed on ice in a cooler. The sample coolers and completed chain-of-custody forms were delivered to Xenco Laboratories Company, an analytical laboratory in Odessa, Texas for standard turnaround analysis for BTEX using EPA SW-846 Method 8021B in each of the four quarters and TPH using EPA SW-846 Method 8015M and PAHs using EPA SW-846 Method 8270C in February 2009.

3.0 DATA EVALUATION

3.1 Water Level Data

Water level measurement data collected during the respective quarterly sampling events were used to construct groundwater gradient maps that are included as Figures 3, 4, 5, and 6 (Appendix A). Groundwater elevation contours generated from the quarterly sampling events of 2008 indicated the general groundwater gradient was consistent with previous sampling events:

- The gradient/direction during the February 2009, May 2009 and August 2009 sampling events was 0.002 ft/ft and toward the southeast; and,

- The gradient/direction during the November 2009 sampling event was 0.009 ft/ft and toward the southeast.

Groundwater flow direction remained relatively consistent throughout 2009, to the southeast. Water level measurement data is summarized in Table 1 in Appendix B.

Groundwater elevations in 2009 increased an average of approximately 0.85 feet in site monitor wells. Terracon has been monitoring natural attenuation parameters in select wells at the site on a quarterly basis. Natural attenuation parameters can be found in Table 4 in Appendix B of this report.

3.2 Groundwater Analysis Data

Laboratory results from the analysis of groundwater samples collected from monitor wells MW-1 through MW-15 and temporary monitor well THM-1 are summarized in Tables 2 and 3 in Appendix B and presented as Figures 7 through Figure 10 in Appendix A. The executed chain-of-custody forms and laboratory data sheets are provided in Appendix C.

1st Quarter

Groundwater samples were collected during the first quarter on February 9, 2009. The first quarter results are summarized below:

- TPH was not detected above laboratory reporting limits in the groundwater samples obtained from monitor wells MW-2, MW-3, MW-4, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, and MW-15.

- TPH was detected in the groundwater samples collected from monitor wells MW-1 (at 3.71 mg/l), MW-5 (at 4.47 mg/l) and TMW-1 (at 81 mg/l); however, the NMWQCC has not established a groundwater standard for TPH;

- Benzene constituents were not detected at concentrations above the laboratory reporting limit and/or NMWQCC groundwater standard in the groundwater samples collected from monitor wells MW-2, MW-3, and MW-6 through MW-15;

- Benzene was detected in the groundwater samples collected from monitor wells MW-1 (at 0.4048 mg/l), MW-4 (at 0.0539 mg/l), MW-5 (at 0.2425 mg/l), and TMW-1 (at 2.044 mg/l), which exceeded the NMWQCC groundwater standard of 0.01 mg/l for benzene;

- Toluene was detected at <2 mg/l, ethylbenzene was detected at a concentration of <1 mg/l and total xylenes were detected at a concentration of <3 mg/l, in the groundwater sample collected from TMW-1, which exceeded their respective NMWQCC groundwater standards of 0.75 mg/l, 0.75 mg/l and 0.62 mg/l, respectively;

- Toluene, ethylbenzene and total xylenes were not detected above their respective laboratory reporting limits and/or the NMWQCC groundwater standards in the remainder of the groundwater samples collected from the monitor wells (MW-1 through MW-15) at the site;

- Temporary monitor well TMW-1 contained naphthalene in February 2009 at a concentration that exceeds the NMWQCC groundwater standard. However, monitor well TMW-1 also contains measurable thicknesses of PSH; and,

- PAH constituents were not detected at concentrations above their respective laboratory reporting limits and/or NMWQCC groundwater standards in any of the remainder of the groundwater samples collected from monitor wells at the site.

2nd Quarter

Groundwater samples were collected during the second quarter on May 14, 2009. The second quarter results are summarized below:

- Four monitor wells were not sampled for BTEX constituents in May 2009 as they are on a sample reduction schedule. These wells are groundwater monitor wells MW-2, MW-3, MW-7 and MW-8;

- Groundwater samples were not collected from monitor well TMW-1 due to the presence of PSH in May 2009;

- The groundwater samples collected from monitor wells MW-6 and MW-9 through MW-15 did not contain benzene at concentrations above the laboratory reporting limit and/or NMWQCC groundwater standard;

- Benzene was detected in the groundwater samples collected from monitor wells MW-1 (at 0.5686 mg/l), MW-4 (at 0.0632 mg/l) and MW-5 (at 0.2339 mg/l), at concentrations which exceeded the NMWQCC groundwater standard and,

- Toluene, ethylbenzene, and total xylenes were not detected in any of the groundwater samples collected from the monitor wells at concentrations exceeding their respective laboratory reporting limits and/or the NMWQCC groundwater standards.

3rd Quarter

Groundwater samples were collected during the third quarter on August 12 and 13, 2009. The third quarter results are summarized below:

- Four monitor wells were not sampled for BTEX constituents in August 2009 as they are on a sample reduction schedule. These wells are groundwater monitor wells MW-2, MW-3, MW-7 and MW-8;

- Groundwater monitor well TMW-1 was not sampled during August 2009, due to the presence of PSH in the wells;

- The groundwater samples collected from monitor wells MW-6, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14 and MW-15 did not contain benzene at concentrations exceeding the laboratory reporting limit and/or NMWQCC groundwater standard;

- Benzene was detected in the groundwater samples collected from MW-1 (at 0.2665 mg/l), MW-4 (at 0.0322 mg/l) and MW-5 (at 0.2247 mg/l), at concentrations which exceed the NMWQCC groundwater standard; and,

- Toluene, ethylbenzene and total xylenes were not detected at concentrations exceeding their respectively laboratory reporting limits and/or NMWQCC groundwater standards in any of the groundwater samples collected from monitor wells at the site.

4th Quarter

Groundwater samples for the fourth quarter event were collected on November 11, 2009. Results of the fourth quarter results are summarized below:

- Four monitor wells were not sampled for BTEX constituents in November 2009 as they are on a sample reduction schedule. These wells are groundwater monitor wells MW-2, MW-3, MW-7 and MW-8;

- Groundwater monitor wells MW-1, MW-5 and TMW-1 were not sampled during November 2009, due to the presence of PSH in the wells;

- Benzene was not detected in the groundwater samples collected from monitor wells MW-6 and MW-9 through MW-15 at concentrations which exceeded the laboratory reporting limit and/or their NMWQCC groundwater standard for benzene;

- The groundwater samples collected from monitor wells MW-1 (at 0.2665 mg/l), MW-4 (at 0.0322 mg/l) and MW-5 (at 0.2247 mg/l) contained benzene at concentrations exceeding the NMWQCC groundwater standard for benzene; and,

- Toluene, ethylbenzene and total xylenes were not detected at concentrations exceeding their respectively laboratory reporting limits and/or NMWQCC groundwater standards in any of the groundwater samples collected from monitor wells at the site.

3.3 Historical Data Comparisons

Measurable PSH has not been present in the groundwater monitor wells MW-2 and MW-6 through MW-15 since they were installed at the site. Monitor wells that historically contain PSH are MW-1 and MW-5, which had measurable PSH present in 2009. With a few exceptions, the temporary monitor well (TMW-1) which was installed in the center of the excavation, in August 2002, has contained measurable PSH at thicknesses ranging from non detect to 5.45 feet. The PSH has diminished in this well since it was installed and in 2009 the thickest PSH measurement was at 2.32 feet in July 2009. Monitor well MW-4 has historically contained PSH; however, in 2009, PSH has not been detected in this well.

With a few exceptions, historically, benzene has not been present in groundwater samples collected from monitor wells MW-2, MW-3 and MW-6 through MW-15. Benzene has been present in the groundwater samples collected monitor wells MW-1, MW-4, MW-5 and TMW-1 at concentrations exceeding the NMWQCC groundwater standard. Toluene, ethylbenzene and total xylenes were detected in the groundwater sample collected from monitor well TMW-1 at concentrations exceeding their respectively laboratory reporting limits and/or NMWQCC groundwater standards in any of the groundwater samples in 2009.

At the direction of the NMOCD, TPH was sampled for the first time in the groundwater samples collected from all monitor wells in February 2009. In February 2009, groundwater samples collected from monitor wells MW-2, MW-3, MW-4, and MW-6 through MW-15 did not contain TPH at concentrations exceeding the laboratory reporting limit. TPH was detected in the groundwater samples collected from monitor wells MW-1, MW-5 and TMW-1 at concentrations exceeding laboratory reporting limits; however, the NMWQCC has not established a groundwater standard for TPH.

With the exception of TMW-1, which also contains PSH, during 2009 none of the groundwater samples contained TPH and PAH constituents at concentrations exceeding their respective laboratory reporting limits and/or NMWQCC groundwater standards.

4.0 FINDINGS AND RECOMMENDATION

4.1 Findings

The annual groundwater report presents the results of four groundwater monitoring and sampling events for the 2009 calendar year.

- Measurable PSH was detected in monitor wells MW-1, MW-5 and TMW-1 in during 2009;
- The groundwater gradient during each quarterly sampling event for 2009, and indicate a relatively consistent southeast groundwater flow direction;
- From 2008 to 2009, groundwater elevations increased by an average of 0.85 feet in site monitor wells;
- Four groundwater monitor wells (MW-2, MW-3, MW-7 and MW-8) are on a sample reduction program and are sampled annually in February for TPH, PAHs and BTEX constituents;
- The groundwater samples collected from monitor wells MW-2, MW-3, and MW-6 through MW-15 have not contained TPH, PAHs or BTEX constituents above their respective laboratory reporting limits and/or their NMWQCC groundwater standards in 2009;
- The groundwater samples collected from monitor wells MW-1, MW-2, MW-5 and TMW-1 contained TPH in February 2009 at concentrations exceeding the laboratory reporting limit; however, the NMWQCC has no established groundwater standard for TPH. The remainder of the groundwater samples collected in February 2009 did not contain TPH above the laboratory reporting limit;
- Temporary monitor well TMW-1 contained naphthalene in February 2009 at a concentration that exceeds the NMWQCC groundwater standard. However, monitor well TMW-1 also contains measurable thicknesses of PSH. The remainder of the groundwater samples collected in February 2009, and analyzed for PAHs did not contain PAH constituents exceeding their respective laboratory reporting limits and/or NMWQCC groundwater standards;
- Groundwater samples collected from monitor wells MW-2, MW-3 and MW-6 through MW-15 have not contained benzene concentrations exceeding the laboratory reporting limit and/or NMWQCC groundwater standard in 2009;

- Groundwater samples collected from monitor wells MW-1 (February 2009, May 2009 and August 2009, MW-4 (February 2009, May 2009 and August 2009); MW-5 (February 2009, May 2009, August 2009 and November 2009), and TMW-1 (February 2009) contained benzene at concentrations exceeding the NMWQCC groundwater standard;

- Toluene, ethylbenzene, and m,p-xylenes, and o-xylenes were detected in the groundwater sample collected from monitor well TMW-1 in February 2009 at concentrations which exceeded their respective NMWQCC groundwater standards;

- Toluene, ethylbenzene and total xylenes were not detected in any of the remainder of the groundwater samples collected in 2009, at concentrations exceeding their respective laboratory reporting limits and/or their NMWQCC groundwater standards; and

- The extent of the PSH plume and the dissolved phase plume exceeding the NMWQCC groundwater standards have been defined. Detected concentrations of BTEX and PAHs have demonstrated a decreasing trend since groundwater sampling activities were initiated.

5.2 RECOMMENDATIONS

Based upon the results of this report and approval from the NMOCD, Terracon recommends the following:

- Continue PSH recovery and purging groundwater from select wells at the site on a bi-weekly schedule to enhance recovery at the site;

- Continue quarterly groundwater sampling for BTEX for all monitor wells for the calendar year 2010 in accordance with the NMOCD approved sample reduction plan;

- Based on the results of the past six years of analysis of the groundwater samples for PAH concentrations which illustrate TPH and PAH concentrations are below NMWQCC groundwater standards, discontinue the annual sampling for TPH and PAHs in all monitor wells at the site.

- Submit an annual report to the NMOCD detailing the 2009 site activities.

DISTRIBUTION

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chlondon@terracon.com

APPENDIX A

Figure 1 – Topographic Map
Figure 2 – Site Plan
Figure 3 – Groundwater Gradient Map (02/09/09)
Figure 4 – Groundwater Gradient Map (05/14/09)
Figure 5 – Groundwater Gradient Map (08/ 12 & 13 /09)
Figure 6 – Groundwater Gradient Map (11/10/09)
Figure 7 – Groundwater Contaminant Concentration Map (02/09/09)
Figure 8 – Groundwater Contaminant Concentration Map (05/ 14 & 15 /09)
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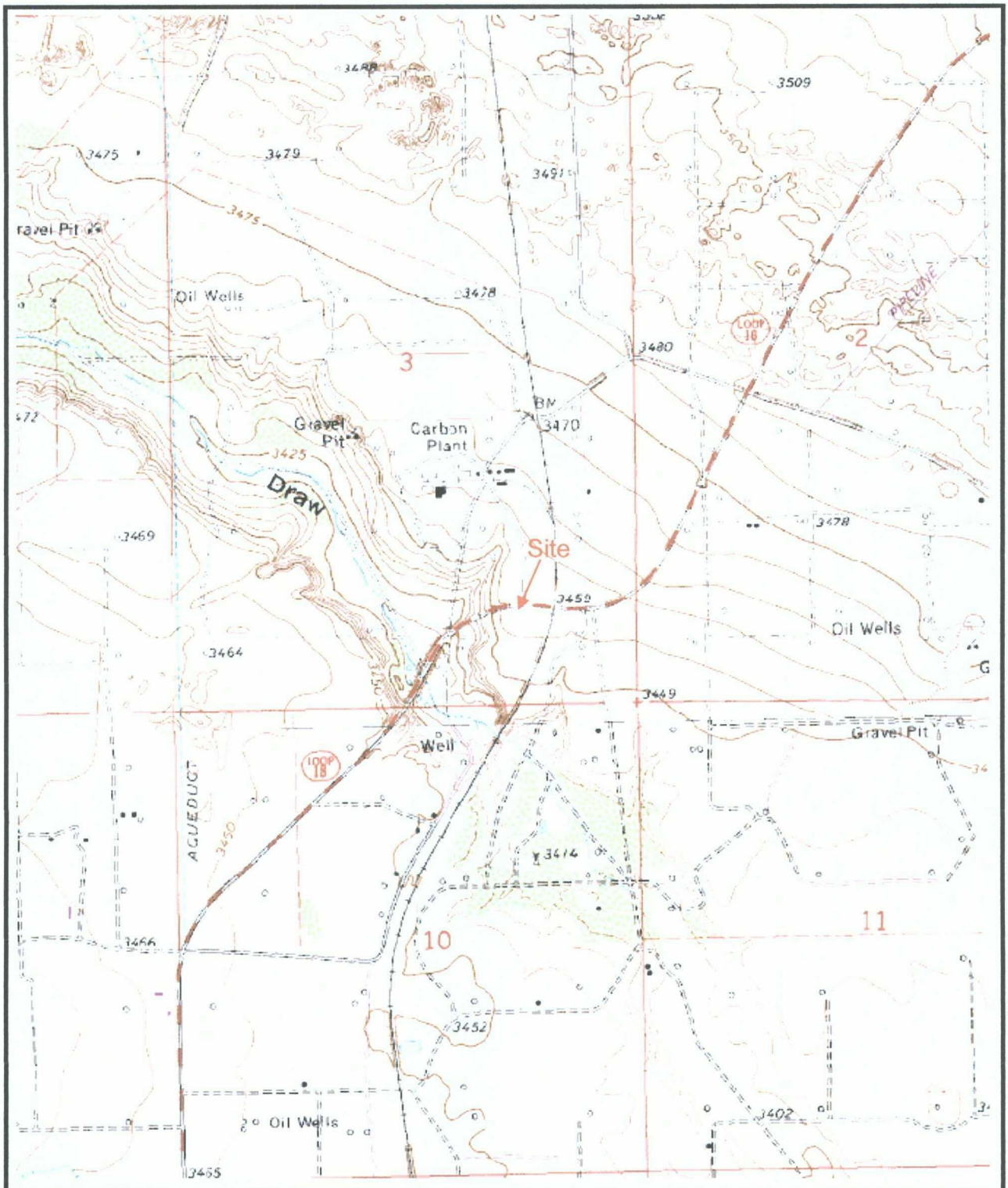
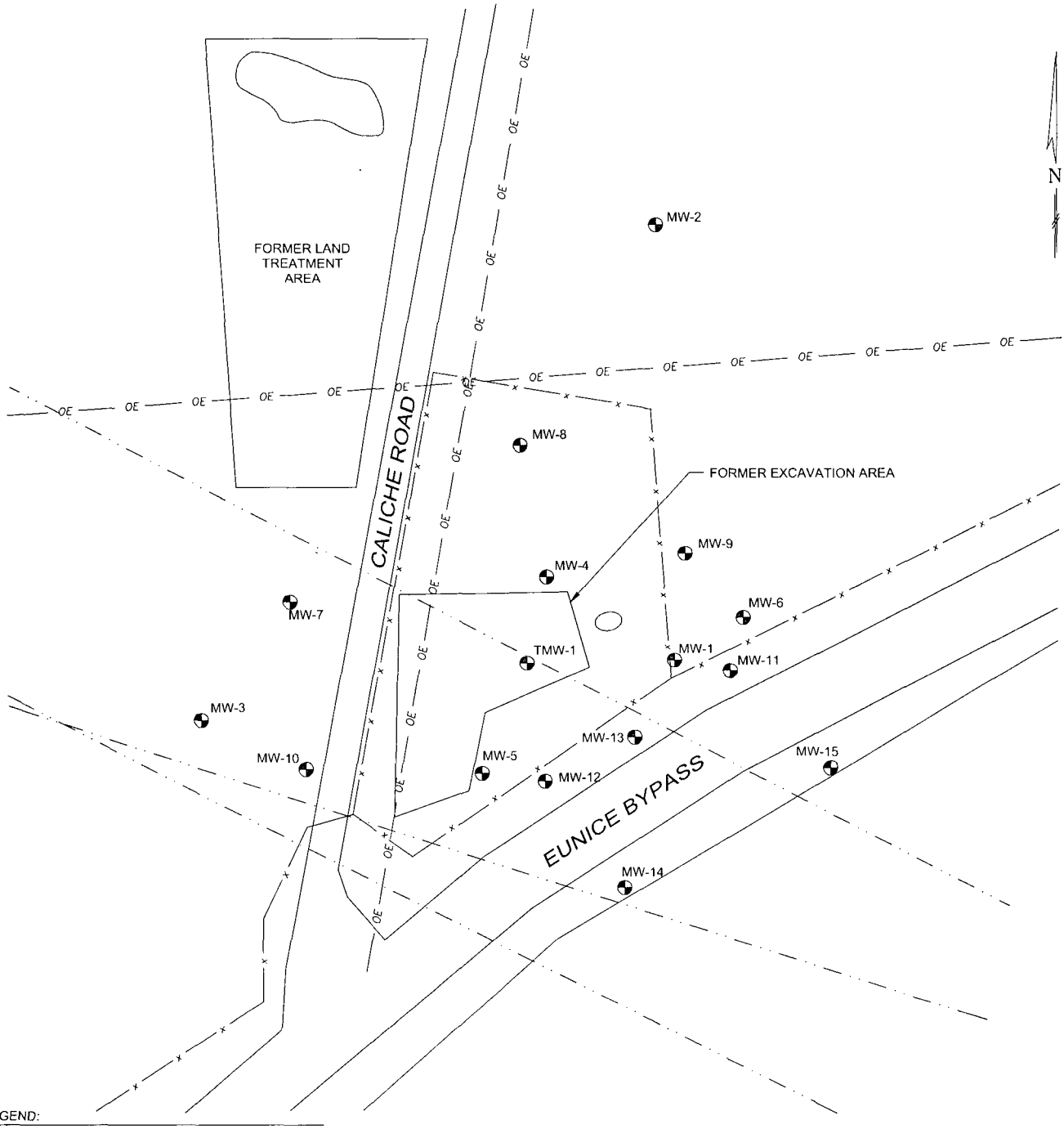
Figure 10 – Groundwater Contaminant Concentration Map (11/11/09)



USGS TOPOGRAPHIC QUADRANGLE MAP Hobbs SW, NM			**Livingston Line to Hugh - P. Sims** NE 1/4 of SE 1/4, Sec. 3, T21S, R37E NMOCD File Number: 1R-0398 Eunice, Lea County, New Mexico
Dated: 1979 SCALE: 1" = 1,600'	N	Terracon	**FIGURE 1: TOPOGRAPHIC MAP**
PROJECT NO. A4077008			



Date: 02/15/08 O:\HBC\MIDLAND\A4077008.dwg Layout: SITE

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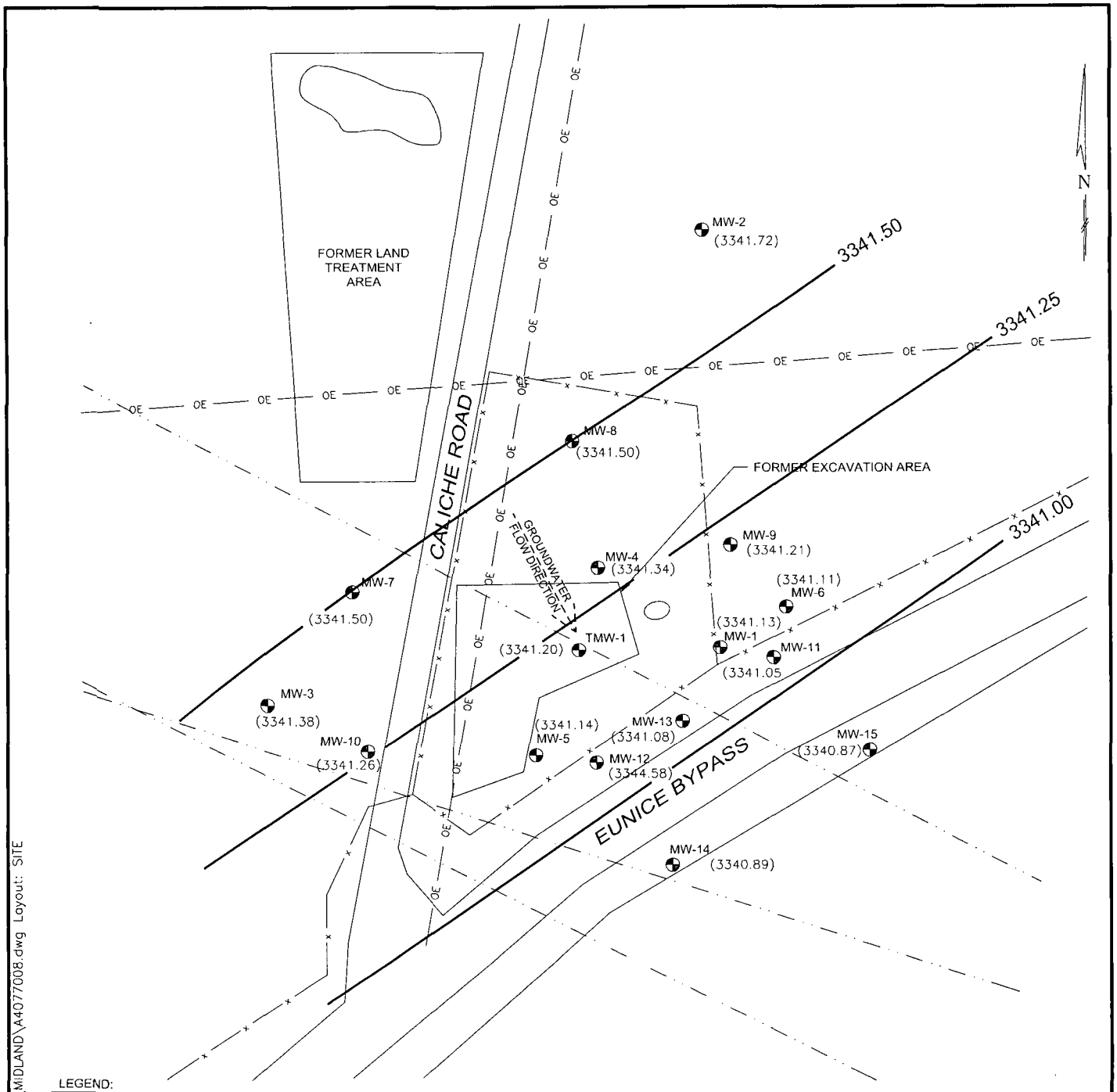
0 40 80 FEET
APPROXIMATE SCALE

PLAINS PIPELINE, L.P.
LIVINGSTON RIDGE TO HUGH P. SIMS
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon **Project No.: A4077008**

FIGURE 2: SITE PLAN



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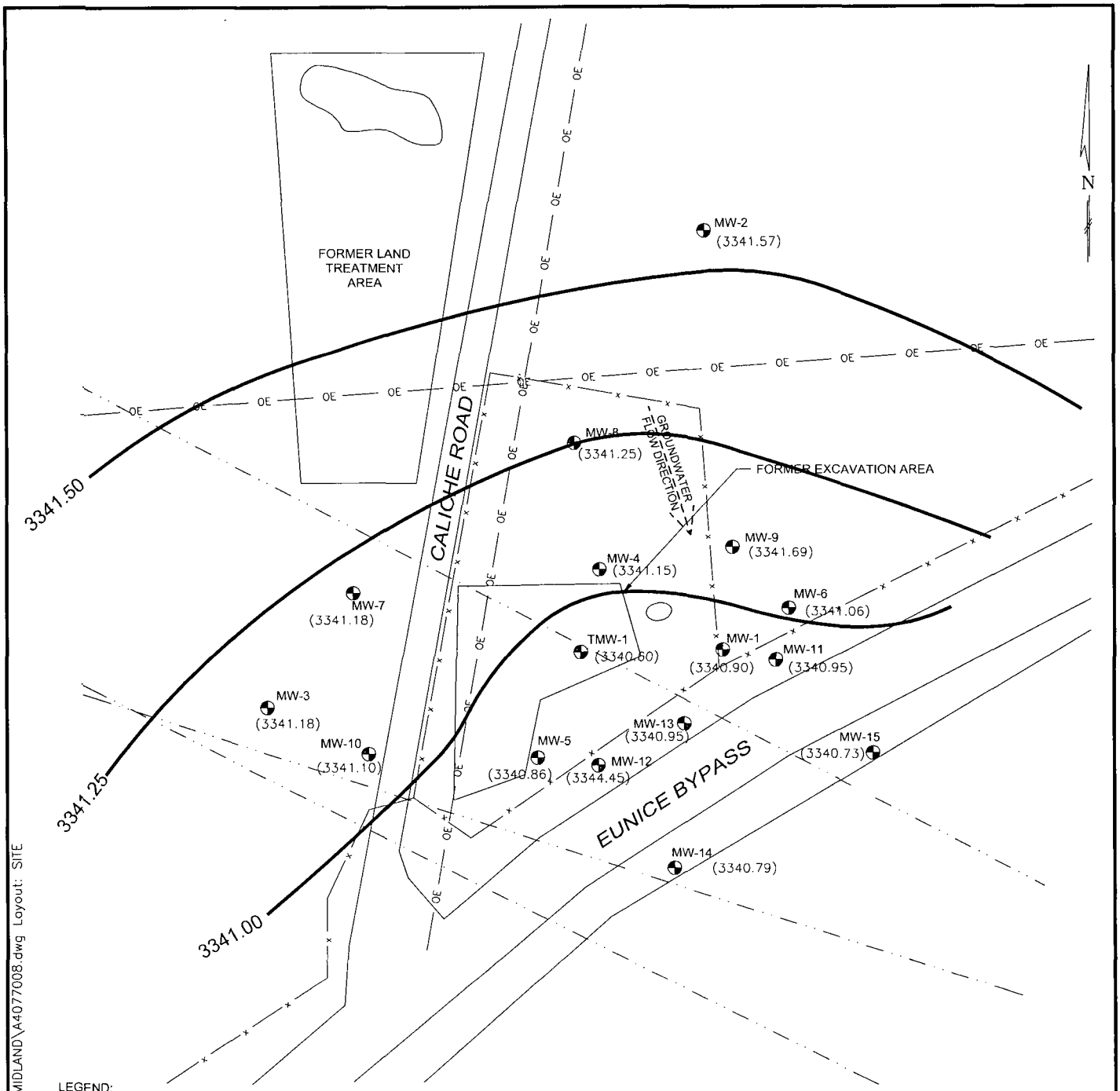
Terracon Project No.: A4077008

FIGURE 3: GROUNDWATER GRADIENT MAP (02/09/09)



LEGEND:

- MONITOR WELL LOCATION
- FENCE
- OIL PIPELINE
- OVERHEAD ELECTRIC LINE
- (3340.60) GROUNDWATER ELEVATION
- 3341.50 GROUNDWATER ELEVATION CONTOUR LINE

MW-12 & MW-9 THE GROUNDWATER ELEVATIONS FOR THESE WELLS WERE NOT USED DUE TO THE DIFFERENCE IN DEPTH WITH RESPECT TO THE OTHER WELLS

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LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

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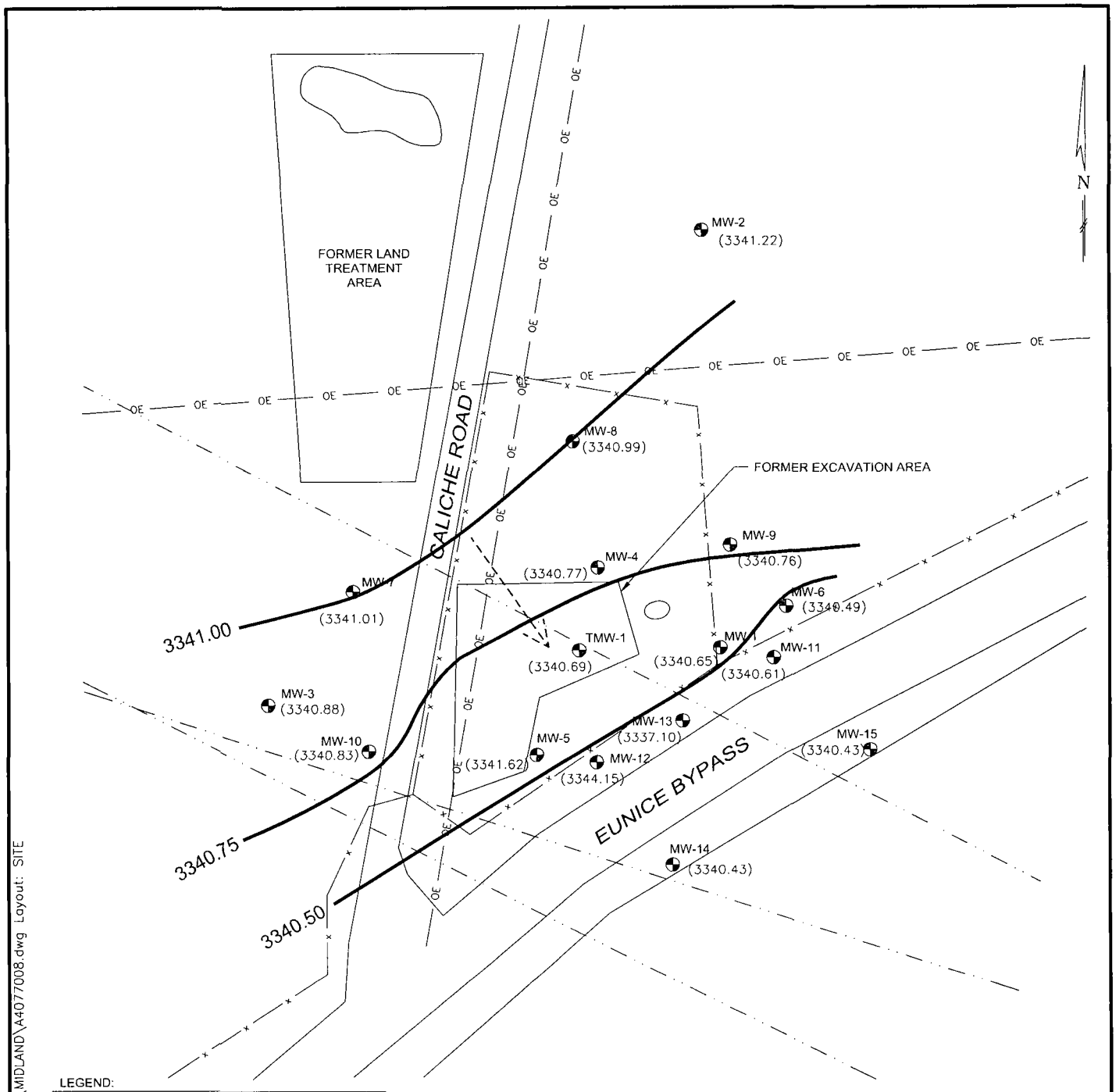
FIGURE 4: GROUNDWATER GRADIENT MAP (05/14/09)



LEGEND:

- MONITOR WELL LOCATION
- FENCE
- OIL PIPELINE
- OVERHEAD ELECTRIC LINE
- (3340.69) GROUNDWATER ELEVATION
- 3341.50 GROUNDWATER ELEVATION CONTOUR LINE
- GROUNDWATER FLOW DIRECTION

MW-12 & MW-13 THE GROUNDWATER ELEVATIONS FOR THESE WELLS WERE NOT USED DUE TO THE DIFFERENCE IN DEPTH WITH RESPECT TO THE OTHER WELLS

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APPROXIMATE SCALE

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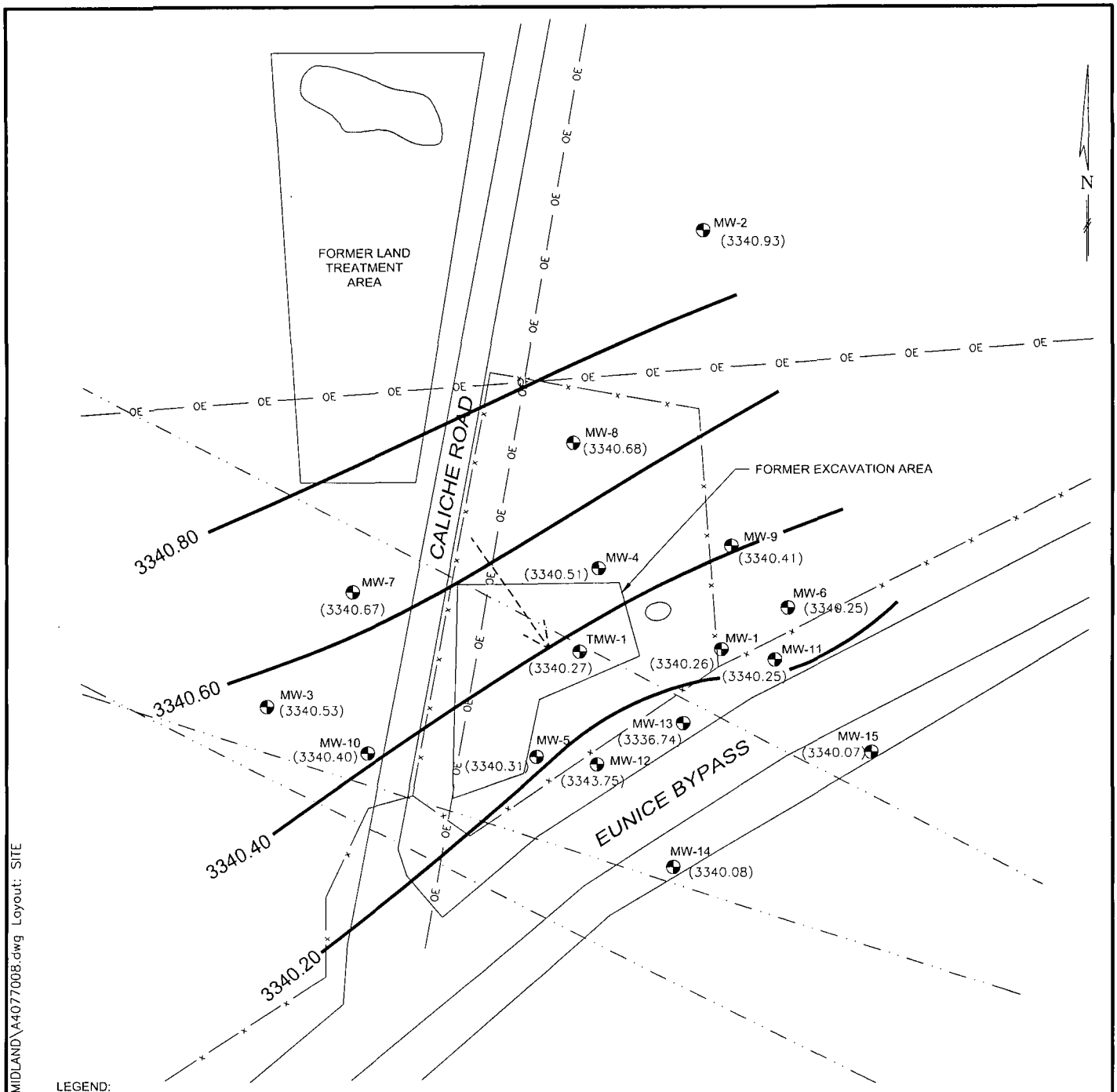
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon **Project No.: A4077008**

FIGURE 5: GROUNDWATER GRADIENT MAP (08/12/09 & 08/13/09)



LEGEND:

- MONITOR WELL LOCATION
- FENCE
- OIL PIPELINE
- OE — OVERHEAD ELECTRIC LINE
- (3340.26) GROUNDWATER ELEVATION
- 3340.60 GROUNDWATER ELEVATION CONTOUR LINE
- GROUNDWATER FLOW DIRECTION

MW-12 & MW-13 THE GROUNDWATER ELEVATIONS FOR THESE WELLS WERE NOT USED DUE TO THE DIFFERENCE IN DEPTH WITH RESPECT TO THE OTHER WELLS

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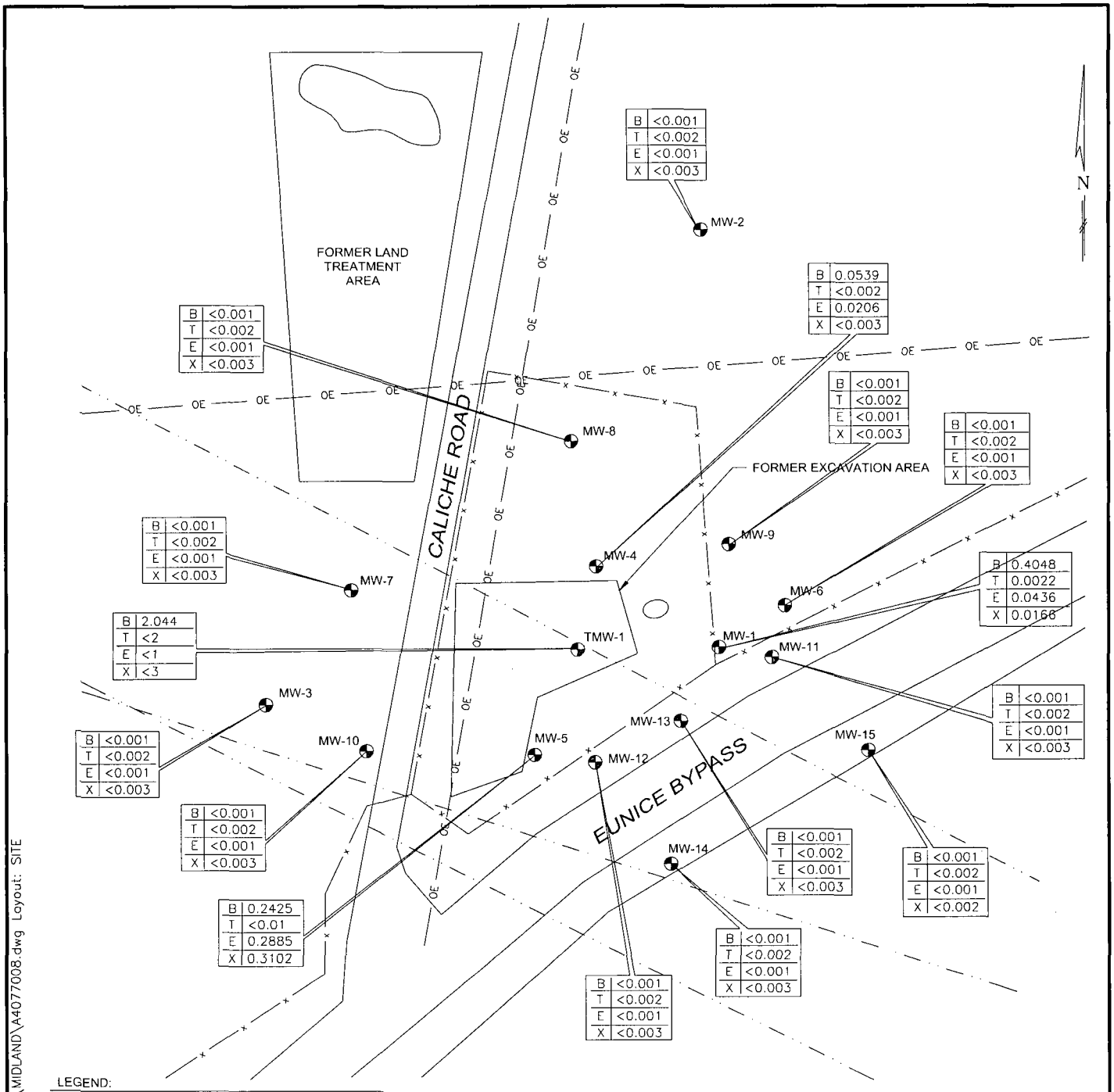
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon **Project No.: A4077008**

FIGURE 6: GROUNDWATER GRADIENT MAP (11/10/09)



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APPROXIMATE SCALE

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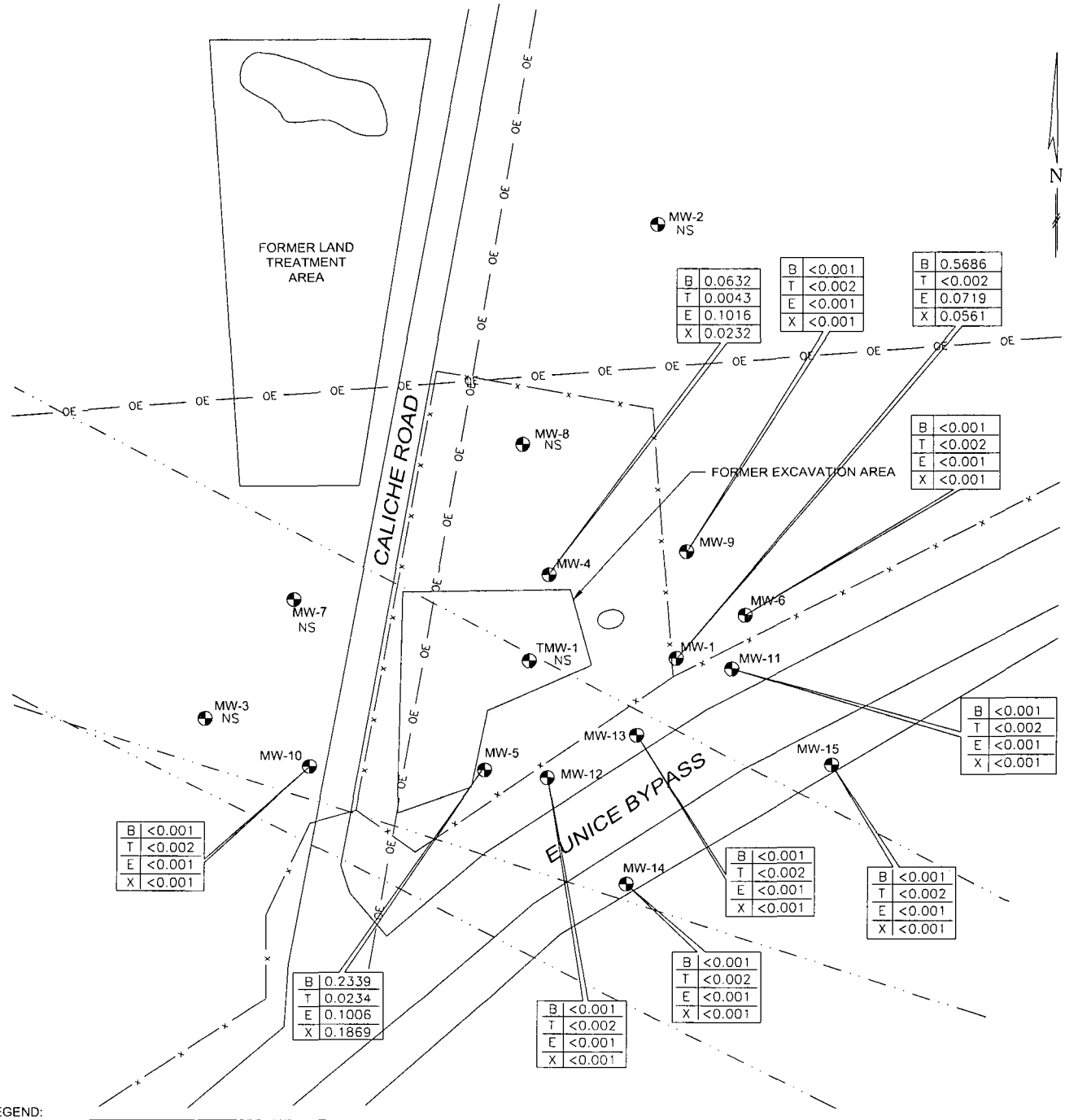
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon Project No.: A4077008

FIGURE 7: GROUNDWATER CONTAMINANT CONCENTRATION MAP (02/09/09)



Date: 05/26/09 O:\HBC\MIDLAND\A4077008.dwg Layout: SITE

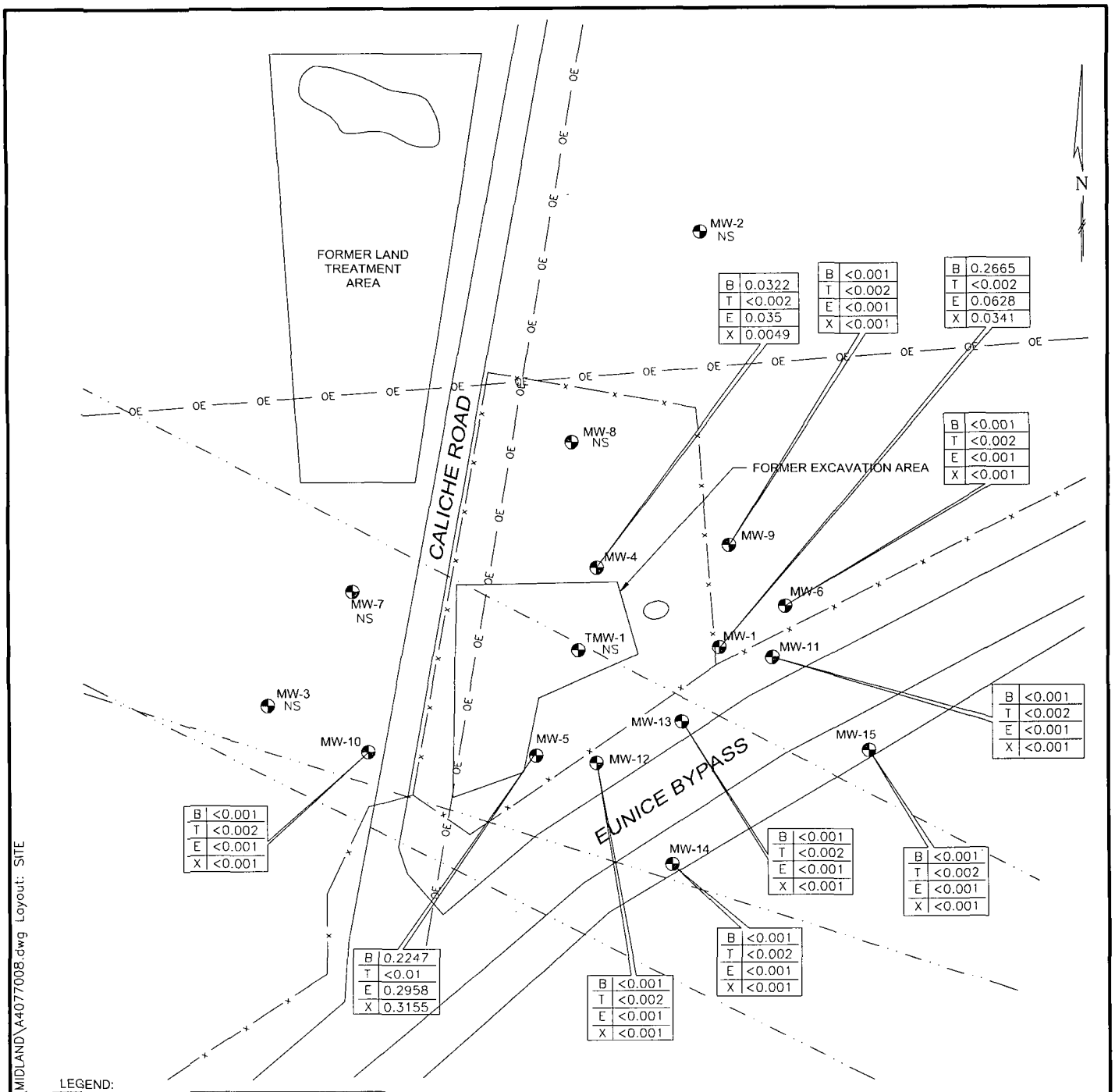
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 40 80 FEET
APPROXIMATE SCALE

PLAINS PIPELINE, L.P.
LIVINGSTON RIDGE TO HUGH P. SIMS
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon Project No.: A4077008

FIGURE 8: GROUNDWATER CONTAMINANT CONCENTRATION MAP (05/14 & 15/09)



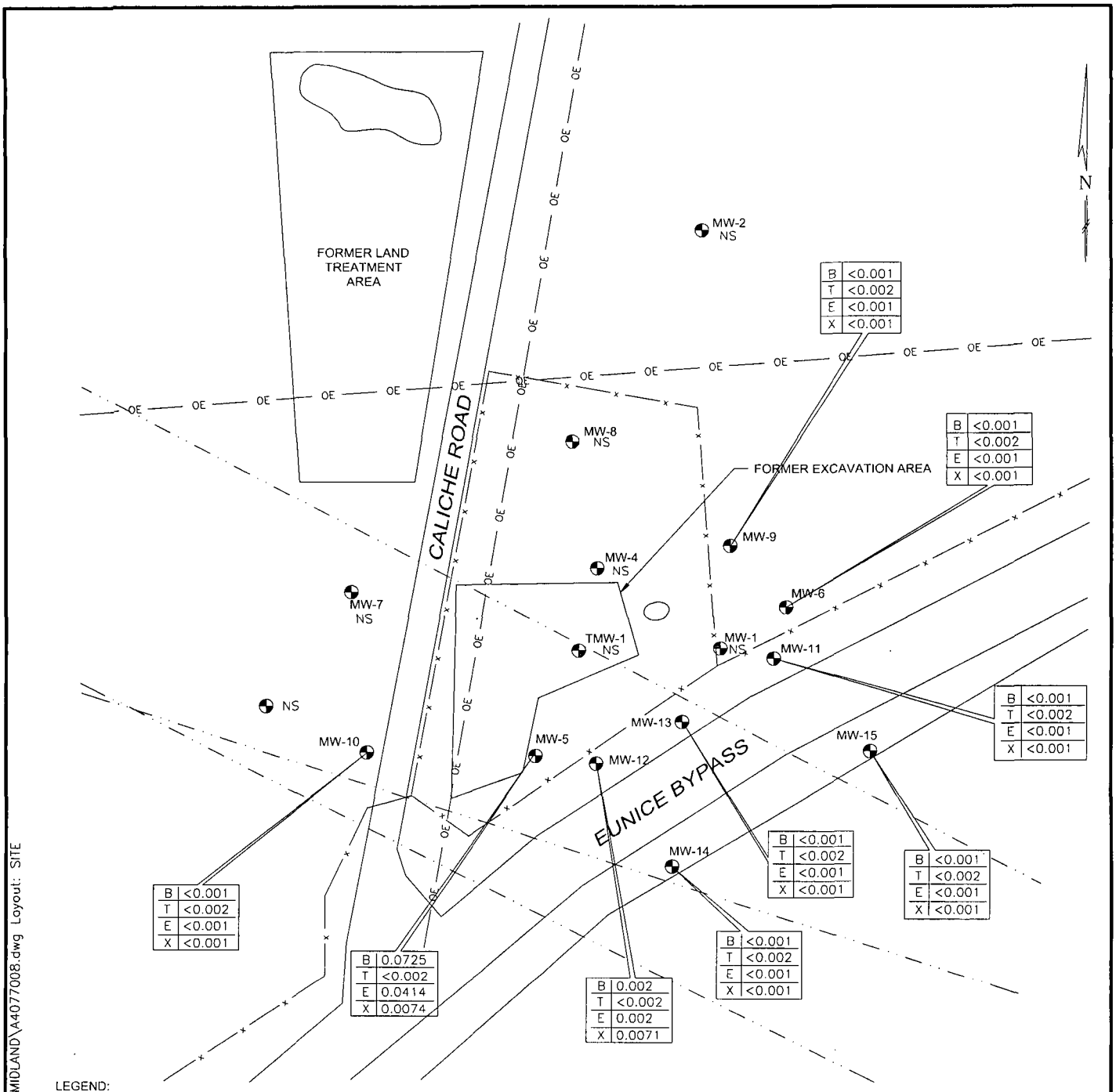
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 40 80 FEET
APPROXIMATE SCALE

PLAINS PIPELINE, L.P.
LIVINGSTON RIDGE TO HUGH P. SIMS
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon Project No.: A4077008

FIGURE 9: GROUNDWATER CONTAMINANT CONCENTRATION MAP (08/12 & 13/09)



LEGEND:

- MONITOR WELL LOCATION
- FENCE
- OIL PIPELINE
- OE — OVERHEAD ELECTRIC LINE
- B — BENZENE
- T — TOLUENE
- E — ETHYLBENZENE
- X — TOTAL XYLENES
- NS — NOT SAMPLED

CONCENTRATIONS ARE IN mg/L

Date: 12/01/09 O:\HBC\MIDLAND\A4077008.dwg Layout: SITE

THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 40 80 FEET
APPROXIMATE SCALE

PLAINS PIPELINE, L.P.
LIVINGSTON RIDGE TO HUGH P. SIMS
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon Project No.: A4077008

FIGURE 10: GROUNDWATER CONTAMINANT CONCENTRATION MAP (11/11/09)

APPENDIX B

Tables

Table 1

GROUNDWATER ELEVATION AND PSH DATA
Livingston Ridge to Hugh - P. Sims Pipeline Leak
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All elevations are measured in feet above mean sea level, except where noted

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW - 1	12/27/07	3,374.23	0.00	32.44	0.00	3,341.79	0.00	0.00
MW - 1	01/18/08		0.00	32.56	0.00	3,341.67	0.00	0.00
MW - 1	02/20/08		0.00	32.58	0.00	3,341.65	0.00	0.00
MW - 1	02/29/08		0.00	32.57	0.00	3,341.66	0.00	0.00
MW - 1	03/11/08		0.00	32.66	0.00	3,341.57	0.00	0.00
MW - 1	04/30/08		0.00	32.65	0.00	3,341.58	0.00	0.00
MW - 1	05/28/08		0.00	32.78	0.00	3,341.45	0.00	0.00
MW - 1	06/25/08		0.00	32.92	0.00	3,341.31	0.00	0.00
MW - 1	07/02/08		0.00	32.97	0.00	3,341.26	0.10	20.00
MW - 1	07/07/08		0.00	33.00	0.00	3,341.23	0.10	10.00
MW - 1	07/14/08		0.00	33.07	0.00	3,341.16	0.10	25.00
MW - 1	07/22/08		0.00	33.09	0.00	3,341.14	0.10	10.00
MW - 1	07/30/08		0.00	29.15	0.00	3,345.08	0.00	0.00
MW - 1	08/05/08		0.00	29.24	0.00	3,344.99	0.00	15.00
MW - 1	08/14/08		0.00	33.25	0.00	3,340.98	0.10	5.00
MW - 1	08/21/08		0.00	33.12	0.00	3,341.11	0.00	0.00
MW - 1	08/27/08		0.00	33.13	0.00	3,341.10	0.00	25.00
MW - 1	09/03/08							25.00
MW - 1	09/20/08		0.00	33.07	0.00	3,341.16	0.00	30.00
MW - 1	09/29/08		0.00	33.11	0.00	3,341.12	0.00	40.00
MW - 1	11/06/08		0.00	33.08	0.00	3,341.15	0.00	0.00
MW - 1	11/15/08		0.00	33.11	0.00	3,341.12	0.00	25.00
MW - 1	11/24/08		0.00	33.04	0.00	3,341.19	0.00	50.00
MW - 1	11/26/08		0.00	33.04	0.00	3,341.19	0.00	50.00
MW - 1	12/20/08		0.00	33.09	0.00	3,341.14	0.00	50.00
MW - 1	01/16/09		0.00	33.13	0.00	3,341.10	0.00	0.00
MW - 1	02/09/09		0.00	33.10	0.00	3,341.13	0.00	0.00
MW - 1	02/25/09		0.00		0.00		0.00	50.00
MW - 1	03/05/09		0.00		0.00		0.00	50.00
MW - 1	03/11/09		0.00		0.00		0.00	50.00
MW - 1	03/19/09		0.00		0.00		0.00	50.00
MW - 1	04/08/09		0.00	33.21	0.00	3,341.02	0.00	50.00
MW - 1	04/16/09		0.00	33.25	0.00	3,340.98	0.00	50.00
MW - 1	04/22/09		0.00	32.32	0.00	3,341.91	0.00	40.00
MW - 1	04/29/08		0.00	33.24	0.00	3,340.99	0.00	50.00
MW - 1	05/06/09		0.00	33.85	0.00	3,340.38	0.00	50.00
MW - 1	05/14/09		0.00	33.33	0.00	3,340.90	0.00	0.00
MW - 1	07/08/09		0.00	33.51	0.00	3,340.72	0.00	30.00
MW - 1	07/24/09		0.00	33.53	0.00	3,340.70	0.00	0.00
MW - 1	08/04/09		0.00	34.35	0.00	3,339.88	0.00	55.00
MW - 1	08/13/09		0.00	33.58	0.00	3,340.65	0.00	0.00
MW - 1	08/19/09		0.00	33.24	0.00	3,340.99	0.00	45.00
MW - 1	09/01/09		33.68	33.72	0.04	3,340.54	5.00	49.50
MW - 1	09/22/09		33.79	33.81	0.02	3,340.44	0.25	5.00
MW - 1	10/12/09		33.84	33.85	0.01	3,340.39	0.00	23.00
MW - 1	10/30/09		0.00	33.94	0.00	3,340.29	0.00	0.00
MW - 1	11/10/09		0.00	33.97	0.00	3,340.26	1.00	24.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA
Livingston Ridge to Hugh - P. Sims Pipeline Leak
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All elevations are measured in feet above mean sea level, except where noted

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW - 2	11/16/07	3,378.27	0.00	35.88	0.00	3,342.39	0.00	0.00
MW - 2	02/29/08		0.00	36.04	0.00	3,342.23	0.00	0.00
MW - 2	05/28/08		0.00	36.15	0.00	3,342.12	0.00	0.00
MW - 2	08/21/08		0.00	36.65	0.00	3,341.62	0.00	0.00
MW - 2	11/06/08		0.00	36.49	0.00	3,341.78	0.00	0.00
MW - 2	02/09/09		0.00	36.55	0.00	3,341.72	0.00	0.00
MW - 2	05/14/09		0.00	36.70	0.00	3,341.57	0.00	0.00
MW - 2	08/12/09		0.00	37.05	0.00	3,341.22	0.00	0.00
MW - 2	11/10/09		0.00	37.34	0.00	3,340.93	0.00	0.00
MW - 3	11/16/07	3,367.36	0.00	25.28	0.00	3,342.08	0.00	0.00
MW - 3	02/29/08		0.00	25.44	0.00	3,341.92	0.00	0.00
MW - 3	05/28/08		0.00	25.55	0.00	3,341.81	0.00	0.00
MW - 3	08/21/08		0.00	26.11	0.00	3,341.25	0.00	0.00
MW - 3	11/06/08		0.00	25.89	0.00	3,341.47	0.00	0.00
MW - 3	02/09/09		0.00	25.98	0.00	3,341.38	0.00	0.00
MW - 3	05/14/09		0.00	26.18	0.00	3,341.18	0.00	0.00
MW - 3	08/13/09		0.00	26.48	0.00	3,340.88	0.00	0.00
MW - 3	11/10/09		0.00	26.83	0.00	3,340.53	0.00	0.00
MW - 4	12/27/07	3,372.73	0.00	30.69	0.00	3,342.04	0.00	0.00
MW - 4	01/18/08		0.00	30.78	0.00	3,341.95	0.00	0.00
MW - 4	02/20/08		0.00	31.83	0.00	3,340.90	0.00	0.00
MW - 4	02/29/08		0.00	30.86	0.00	3,341.87	0.00	0.00
MW - 4	04/30/08		0.00	30.82	0.00	3,341.91	0.00	0.00
MW - 4	05/28/08		0.00	31.09	0.00	3,341.64	0.00	0.00
MW - 4	06/25/08		0.00	37.66	0.00	3,335.07	0.00	0.00
MW - 4	07/02/08		0.00	31.28	0.00	3,341.45	0.00	20.00
MW - 4	07/07/08		0.00	31.34	0.00	3,341.39	0.00	10.00
MW - 4	07/14/08		0.00	34.51	0.00	3,338.22	0.00	25.00
MW - 4	07/22/08		0.00	31.39	0.00	3,341.34	0.00	10.00
MW - 4	07/30/08		0.00	31.40	0.00	3,341.33	0.00	10.00
MW - 4	08/05/08		0.00	31.50	0.00	3,341.23	0.00	10.00
MW - 4	08/14/08		0.00	31.55	0.00	3,341.18	0.00	5.00
MW - 4	08/21/08		0.00	31.43	0.00	3,341.30	0.00	0.00
MW - 4	08/27/08		0.00	31.42	0.00	3,341.31	0.00	25.00
MW - 4	09/03/08							25.00
MW - 4	09/20/08		0.00	31.34	0.00	3,341.39	0.00	30.00
MW - 4	09/29/08		0.00	31.34	0.00	3,341.39	0.00	40.00
MW - 4	11/06/08		0.00	31.38	0.00	3,341.35	0.00	0.00
MW - 4	11/15/08		0.00	31.40	0.00	3,341.33	0.00	50.00
MW - 4	11/24/08		0.00	31.35	0.00	3,341.38	0.00	25.00
MW - 4	11/26/08		0.00	31.34	0.00	3,341.39	0.00	25.00
MW - 4	12/20/08		0.00	31.39	0.00	3,341.34	0.00	50.00
MW - 4	01/16/09		0.00	31.42	0.00	3,341.31	0.00	0.00
MW - 4	02/09/09		0.00	31.39	0.00	3,341.34	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA
Livingston Ridge to Hugh - P. Sims Pipeline Leak
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All elevations are measured in feet above mean sea level, except where noted

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW - 4	02/25/09		0.00		0.00		0.00	50.00
MW - 4	03/05/09		0.00		0.00		0.00	50.00
MW - 4	03/11/09		0.00		0.00		0.00	50.00
MW - 4	03/19/09		0.00		0.00		0.00	50.00
MW - 4	04/08/09		0.00	31.10	0.00	3,341.63	0.00	50.00
MW - 4	04/16/09		0.00	31.50	0.00	3,341.23	0.00	35.00
MW - 4	04/22/09		0.00	31.57	0.00	3,341.16	0.00	50.00
MW - 4	04/29/08		0.00		0.00		0.00	45.00
MW - 4	05/06/09		0.00		0.00		0.00	50.00
MW - 4	05/14/09		0.00	31.58	0.00	3,341.15	0.00	0.00
MW - 4	07/08/09		0.00	31.79	0.00	3,340.94	0.00	35.00
MW - 4	07/24/09		0.00	31.85	0.00	3,340.88	0.00	0.00
MW - 4	08/04/09		0.00	31.85	0.00	3,340.88	0.00	55.00
MW - 4	08/12/09		0.00	31.96	0.00	3,340.77	0.00	0.00
MW - 4	08/19/09		0.00	31.90	0.00	3,340.83	0.00	32.00
MW - 4	09/01/09		0.00	32.00	0.00	3,340.73	0.00	53.50
MW - 4	09/22/09		0.00	32.08	0.00	3,340.65	0.00	10.00
MW - 4	10/12/09		0.00	32.13	0.00	3,340.60	0.00	17.00
MW - 4	10/30/09		0.00	32.27	0.00	3,340.46	0.00	0.00
MW - 4	11/10/09		0.00	32.22	0.00	3,340.51	0.00	25.00
MW - 5	12/27/07	3,370.92	0.00	29.29	0.00	3,341.63	0.10	0.00
MW - 5	01/18/08		0.00	29.40	0.00	3,341.52	0.00	0.00
MW - 5	02/20/08		0.00	29.43	0.00	3,341.49	0.00	0.00
MW - 5	02/29/08		0.00	29.43	0.00	3,341.49	0.00	0.00
MW - 5	03/11/08		0.00	29.87	0.00	3,341.05	0.00	0.00
MW - 5	04/30/08		0.00	29.45	0.00	3,341.47	0.00	0.00
MW - 5	05/28/08		0.00	29.55	0.00	3,341.37	0.00	0.00
MW - 5	06/25/08		0.00	29.70	0.00	3,341.22	0.00	0.00
MW - 5	07/02/08		0.00	29.75	0.00	3,341.17	0.00	20.00
MW - 5	07/07/08		0.00	28.83	0.00	3,342.09	0.00	10.00
MW - 5	07/14/08		0.00	29.82	0.00	3,341.10	0.00	25.00
MW - 5	07/22/08		0.00	29.87	0.00	3,341.05	0.00	10.00
MW - 5	07/30/08		0.00	29.93	0.00	3,340.99	0.00	15.00
MW - 5	08/05/08		0.00	29.94	0.00	3,340.98	0.00	15.00
MW - 5	08/14/08		0.00	30.06	0.00	3,340.86	0.00	5.00
MW - 5	08/21/08		0.00	29.83	0.00	3,341.09	0.00	0.00
MW - 5	08/27/08		0.00	29.69	0.00	3,341.23	0.00	25.00
MW - 5	09/03/08							25.00
MW - 5	09/20/08		0.00	29.75	0.00	3,341.17	0.00	30.00
MW - 5	09/29/08		0.00	29.74	0.00	3,341.18	0.00	40.00
MW - 5	11/06/08		0.00	29.75	0.00	3,341.17	0.00	0.00
MW - 5	11/15/08		0.00	29.89	0.00	3,341.03	0.00	50.00
MW - 5	11/24/08		0.00	29.76	0.00	3,341.16	0.00	25.00
MW - 5	11/26/08		0.00	29.74	0.00	3,341.18	0.00	25.00
MW - 5	12/20/08		0.00	29.79	0.00	3,341.13	0.00	50.00
MW - 5	01/16/09		0.00	29.84	0.00	3,341.08	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA
Livingston Ridge to Hugh - P. Sims Pipeline Leak
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All elevations are measured in feet above mean sea level, except where noted

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW - 5	02/09/09		0.00	29.78	0.00	3,341.14	0.00	0.00
MW - 5	02/25/09		0.00		0.00		0.00	50.00
MW - 5	03/05/09		0.00		0.00		0.00	50.00
MW - 5	03/11/09		0.00		0.00		0.00	50.00
MW - 5	03/19/09		0.00		0.00		0.00	50.00
MW - 5	04/08/09		0.00	29.91	0.00	3,341.01	0.00	50.00
MW - 5	04/16/09		0.00	29.90	0.00	3,341.02	0.00	45.00
MW - 5	04/22/09		0.00	30.02	0.00	3,340.90	0.00	30.00
MW - 5	04/29/08		0.00	29.92	0.00	3,341.00	0.00	50.00
MW - 5	05/06/09		0.00		0.00		0.00	50.00
MW - 5	05/14/09		0.00	30.06	0.00	3,340.86	0.00	0.00
MW - 5	07/08/09		0.00	30.19	0.00	3,340.73	0.00	30.00
MW - 5	07/24/09		0.00	30.23	0.00	3,340.69	0.00	0.00
MW - 5	08/04/09		0.00	30.28	0.00	3,340.64	0.00	55.00
MW - 5	08/12/09		0.00	29.30	0.00	3,341.62	0.00	0.00
MW - 5	08/19/09		0.00	30.31	0.00	3,340.61	0.00	42.00
MW - 5	09/01/09		0.00	30.39	0.00	3,340.53	0.00	52.30
MW - 5	09/22/09		30.48	30.49	0.01	3,340.44	0.00	10.00
MW - 5	10/12/09		0.00	30.54	0.00	3,340.38	0.00	23.00
MW - 5	10/30/09		0.00	29.63	0.00	3,341.29	0.00	0.00
MW - 5	11/10/09		0.00	30.61	0.00	3,340.31	0.00	30.00
MW - 6	11/16/07	3,377.02	0.00	35.22	0.00	3,341.80	0.00	0.00
MW - 6	02/29/08		0.00	35.36	0.00	3,341.66	0.00	0.00
MW - 6	03/11/08		0.00	35.37	0.00	3,341.65	0.00	0.00
MW - 6	05/28/08		0.00	35.46	0.00	3,341.56	0.00	0.00
MW - 6	08/21/08		0.00	35.99	0.00	3,341.03	0.00	0.00
MW - 6	11/06/08		0.00	35.94	0.00	3,341.08	0.00	0.00
MW - 6	02/09/09		0.00	35.91	0.00	3,341.11	0.00	0.00
MW - 6	05/14/09		0.00	35.96	0.00	3,341.06	0.00	0.00
MW - 6	08/12/09		0.00	36.53	0.00	3,340.49	0.00	0.00
MW - 6	11/10/09		0.00	36.77	0.00	3,340.25	0.00	0.00
MW - 7	11/16/07	3,369.47	0.00	27.26	0.00	3,342.21	0.00	0.00
MW - 7	02/29/08		0.00	27.43	0.00	3,342.04	0.00	0.00
MW - 7	05/28/08		0.00	27.54	0.00	3,341.93	0.00	0.00
MW - 7	08/21/08		0.00	28.09	0.00	3,341.38	0.00	0.00
MW - 7	11/06/08		0.00	27.89	0.00	3,341.58	0.00	0.00
MW - 7	02/09/09		0.00	27.97	0.00	3,341.50	0.00	0.00
MW - 7	05/14/09		0.00	28.29	0.00	3,341.18	0.00	0.00
MW - 7	08/13/09		0.00	28.46	0.00	3,341.01	0.00	0.00
MW - 7	11/10/09		0.00	28.80	0.00	3,340.67	0.00	0.00
MW - 8	11/16/07	3,373.77	0.00	31.58	0.00	3,342.19	0.00	0.00
MW - 8	02/29/08		0.00	31.72	0.00	3,342.05	0.00	0.00
MW - 8	05/28/08		0.00	31.96	0.00	3,341.81	0.00	0.00
MW - 8	08/21/08		0.00	32.33	0.00	3,341.44	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA
Livingston Ridge to Hugh - P. Sims Pipeline Leak
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All elevations are measured in feet above mean sea level, except where noted

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW - 8	11/06/08		0.00	32.19	0.00	3,341.58	0.00	0.00
MW - 8	02/09/09		0.00	32.27	0.00	3,341.50	0.00	0.00
MW - 8	05/14/09		0.00	32.52	0.00	3,341.25	0.00	0.00
MW - 8	08/12/09		0.00	32.78	0.00	3,340.99	0.00	0.00
MW - 8	11/10/09		0.00	33.09	0.00	3,340.68	0.00	0.00
MW - 9	11/16/07	3,375.92	0.00	34.02	0.00	3,341.90	0.00	0.00
MW - 9	02/29/08		0.00	34.18	0.00	3,341.74	0.00	0.00
MW - 9	05/28/08		0.00	34.45	0.00	3,341.47	0.00	0.00
MW - 9	08/21/08		0.00	34.79	0.00	3,341.13	0.00	0.00
MW - 9	11/06/08		0.00	34.84	0.00	3,341.08	0.00	0.00
MW - 9	02/09/09		0.00	34.71	0.00	3,341.21	0.00	0.00
MW - 9	05/14/09		0.00	34.23	0.00	3,341.69	0.00	0.00
MW - 9	08/12/09		0.00	35.16	0.00	3,340.76	0.00	0.00
MW - 9	11/10/09		0.00	35.51	0.00	3,340.41	0.00	0.00
MW - 10	11/16/07	3,370.17	0.00	28.20	0.00	3,341.97	0.00	0.00
MW - 10	02/29/08		0.00	28.42	0.00	3,341.75	0.00	0.00
MW - 10	05/28/08		0.00	28.48	0.00	3,341.69	0.00	0.00
MW - 10	08/21/08		0.00	29.04	0.00	3,341.13	0.00	0.00
MW - 10	11/06/08		0.00	28.82	0.00	3,341.35	0.00	0.00
MW - 10	02/09/09		0.00	28.91	0.00	3,341.26	0.00	0.00
MW - 10	05/14/09		0.00	29.07	0.00	3,341.10	0.00	0.00
MW - 10	08/12/09		0.00	29.34	0.00	3,340.83	0.00	0.00
MW - 10	11/10/09		0.00	29.77	0.00	3,340.40	0.00	0.00
MW-11	11/16/07	3,373.96	0.00	29.69	0.00	3,344.27	0.00	0.00
MW-11	02/29/08		0.00	29.30	0.00	3,344.66	0.00	0.00
MW-11	05/28/08		0.00	32.41	0.00	3,341.55	0.00	0.00
MW-11	08/21/08		0.00	32.98	0.00	3,340.98	0.00	0.00
MW-11	11/06/08		0.00	32.85	0.00	3,341.11	0.00	0.00
MW-11	02/09/09		0.00	32.91	0.00	3,341.05	0.00	0.00
MW-11	05/14/09		0.00	33.01	0.00	3,340.95	0.00	0.00
MW-11	08/12/09		0.00	33.35	0.00	3,340.61	0.00	0.00
MW-11	11/10/09		0.00	33.71	0.00	3,340.25	0.00	0.00
MW- 12	11/16/07	3,372.41	0.00	33.32	0.00	3,339.09	0.00	0.00
MW- 12	02/29/08		0.00	27.29	0.00	3,345.12	0.00	0.00
MW- 12	05/28/08		0.00	27.35	0.00	3,345.06	0.00	0.00
MW- 12	08/21/08		0.00	27.92	0.00	3,344.49	0.00	0.00
MW- 12	11/06/08		0.00	27.74	0.00	3,344.67	0.00	0.00
MW- 12	02/09/09		0.00	27.83	0.00	3,344.58	0.00	0.00
MW- 12	05/14/09		0.00	27.96	0.00	3,344.45	0.00	0.00
MW- 12	08/13/09		0.00	28.26	0.00	3,344.15	0.00	0.00
MW- 12	11/10/09		0.00	28.66	0.00	3,343.75	0.00	0.00
MW- 13	11/16/07	3,368.91	0.00	27.11	0.00	3,341.80	0.00	0.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA
Livingston Ridge to Hugh - P. Sims Pipeline Leak
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All elevations are measured in feet above mean sea level, except where noted

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
MW- 13	02/29/08		0.00	30.80	0.00	3,338.11	0.00	0.00
MW- 13	05/28/08		0.00	30.28	0.00	3,338.63	0.00	0.00
MW- 13	08/21/08		0.00	31.43	0.00	3,337.48	0.00	0.00
MW- 13	11/06/08		0.00	31.26	0.00	3,337.65	0.00	0.00
MW- 13	02/09/09		0.00	31.36	0.00	3,337.55	0.00	0.00
MW- 13	05/14/09		0.00	31.51	0.00	3,337.40	0.00	0.00
MW- 13	08/12/09		0.00	31.81	0.00	3,337.10	0.00	0.00
MW- 13	11/10/09		0.00	32.17	0.00	3,336.74	0.00	0.00
MW- 14	11/16/07	3,371.54	0.00	29.94	0.00	3,341.60	0.00	0.00
MW- 14	02/29/08		0.00	30.08	0.00	3,341.46	0.00	0.00
MW- 14	05/28/08		0.00	30.27	0.00	3,341.27	0.00	0.00
MW- 14	08/21/08		0.00	30.70	0.00	3,340.84	0.00	0.00
MW- 14	11/06/08		0.00	30.55	0.00	3,340.99	0.00	0.00
MW- 14	02/09/09		0.00	30.65	0.00	3,340.89	0.00	0.00
MW- 14	05/14/09		0.00	30.75	0.00	3,340.79	0.00	0.00
MW- 14	08/12/09		0.00	31.11	0.00	3,340.43	0.00	0.00
MW- 14	11/10/09		0.00	31.46	0.00	3,340.08	0.00	0.00
MW- 15	11/16/07	3,377.64	0.00	36.09	0.00	3,341.55	0.00	0.00
MW- 15	02/29/08		0.00	36.20	0.00	3,341.44	0.00	0.00
MW- 15	05/28/08		0.00	36.31	0.00	3,341.33	0.00	0.00
MW- 15	08/21/08		0.00	36.80	0.00	3,340.84	0.00	0.00
MW- 15	11/06/08		0.00	36.69	0.00	3,340.95	0.00	0.00
MW- 15	02/09/09		0.00	36.77	0.00	3,340.87	0.00	0.00
MW- 15	05/14/09		0.00	36.91	0.00	3,340.73	0.00	0.00
MW- 15	08/12/09		0.00	37.21	0.00	3,340.43	0.00	0.00
MW- 15	11/10/09		0.00	37.57	0.00	3,340.07	0.00	0.00
TMW-1	12/27/07	3372.24	30.28	30.60	0.32	3,341.91	2.00	0.00
TMW-1	01/18/08		30.51	30.59	0.08	3,341.72	0.10	0.00
TMW-1	02/20/08		30.59	30.78	0.19	3,341.62	0.50	0.00
TMW-1	02/29/08		30.53	30.55	0.02	3,341.71	0.00	0.00
TMW-1	03/11/08		30.56	30.66	0.10	3,341.67	0.10	0.00
TMW-1	04/30/08		30.42	30.93	0.51	3,341.74	0.20	0.00
TMW-1	05/28/08		30.83	31.07	0.24	3,341.37	0.00	0.00
TMW-1	06/25/08		30.84	31.22	0.38	3,341.34	1.10	0.00
TMW-1	07/02/08		29.90	31.64	1.74	3,342.08	0.10	20.00
TMW-1	07/07/08		31.24	31.32	0.08	3,340.99	0.10	10.00
TMW-1	07/14/08		31.00	32.00	1.00	3,341.09	1.00	25.00
TMW-1	07/22/08		31.00	31.28	0.28	3,341.20	0.50	10.00
TMW-1	07/30/08		31.03	31.43	0.40	3,341.15	0.10	10.00
TMW-1	08/05/08		31.24	31.50	0.26	3,340.96	0.10	15.00
TMW-1	08/14/08		31.18	31.58	0.40	3,341.00	0.25	5.00
TMW-1	08/21/08		31.00	31.61	0.61	3,341.15	0.00	0.00
TMW-1	08/27/08		31.06	31.39	0.33	3,341.13	0.25	25.00
TMW-1	09/03/08							25.00
TMW-1	09/20/08		30.91	31.43	0.52	3,341.25	0.50	30.00

Table 1

GROUNDWATER ELEVATION AND PSH DATA
Livingston Ridge to Hugh - P. Sims Pipeline Leak
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All elevations are measured in feet above mean sea level, except where noted

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED (gallons)	VOLUME PURGED (gallons)
TMW-1	09/29/08		30.88	31.55	0.67	3,341.26	0.50	40.00
TMW-1	11/06/08		30.84	32.00	1.16	3,341.23	0.00	0.00
TMW-1	11/15/08		30.94	31.82	0.88	3,341.17	0.50	50.00
TMW-1	11/24/08		30.93	31.30	0.37	3,341.25	0.10	25.00
TMW-1	11/26/08		30.91	31.43	0.52	3,341.25	0.10	25.00
TMW-1	12/20/08			31.45	0.00	3,340.79	0.50	50.00
TMW-1	01/16/09		30.96	31.70	0.74	3,341.17	0.00	0.00
TMW-1	02/09/09		30.85	32.15	1.30	3,341.20	0.00	0.00
TMW-1	02/25/09						2.00	50.00
TMW-1	03/05/09						2.00	50.00
TMW-1	03/11/09						1.00	50.00
TMW-1	03/19/09						1.00	50.00
TMW-1	04/08/09		31.10	31.80	0.70	3,341.04	0.50	50.00
TMW-1	04/16/09		30.92	31.99	1.07	3,341.16	1.00	50.00
TMW-1	04/22/09		31.01	31.80	0.79	3,341.11	0.50	50.00
TMW-1	04/29/08		31.01	32.02	1.01	3,341.08	0.30	50.00
TMW-1	05/06/09							40.00
TMW-1	05/14/09		31.56	32.09	0.53	3,340.60	0.00	0.00
TMW-1	07/08/09		31.14	33.46	2.32	3,340.75	1.50	48.50
TMW-1	07/24/09		31.35	32.35	1.00	3,340.74	1.00	49.00
TMW-1	08/04/09		31.42	32.18	0.76	3,340.71	1.00	55.00
TMW-1	08/12/09		31.41	32.36	0.95	3,340.69	0.00	0.00
TMW-1	08/19/09		31.41	32.55	1.14	3,340.66	3.00	15.00
TMW-1	09/01/09		32.23	32.83	0.60	3,339.92	11.00	47.00
TMW-1	09/22/09		31.52	33.27	1.75	3,340.46	10.00	0.00
TMW-1	10/12/09		31.64	32.42	0.78	3,340.48	4.00	41.00
TMW-1	10/30/09		31.78	31.80	0.02	3,340.46	0.25	0.00
TMW-1	11/10/09		31.96	32.06	0.10	3,340.27	1.00	25.00
							61.20	Total Gallons
							1.46	Total Barrels

Elevations are based on the North American Vertical Datum of 1929.
PSH - Phase Separated Hydrocarbons
ND - PSH not detected
Note: Heavy rains April 3, 4 & 5, 2004;
* - denotes excavation flooded 3 weeks
(1) Well extended to ground surface, resurveyed on September 7, 2007.

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline	Diesel	Oil	Total
MW-1	11/02/04	**0.725**	0.321	**0.995**	**1.68**	**0.537**	NA	NA	NA	NA
MW-1	03/22/05	Not Sampled Due to Sample Reduction								
MW-1	05/17/05	Not Sampled Due to Sample Reduction								
MW-1	08/15/05	Not Sampled Due to Sample Reduction								
MW-1	11/18/05	**0.104**	<0.001	0.0328	0.0347	0.00736	NA	NA	NA	NA
MW-1	02/16/06	**1.08**	<0.001	0.4	0.37	0.0838	NA	NA	NA	NA
MW-1	05/22/06	**1.06**	<0.005	1.1	1.07	0.0732	NA	NA	NA	NA
MW-1	08/07/06	**1.15**	<0.001	0.323	0.336	0.0276	NA	NA	NA	NA
MW-1	11/21/06	Not Sampled								
MW-1	02/28/07	**0.714**	<0.02	0.439	0.498		NA	NA	NA	NA
MW-1	05/11/07	**0.966**	0.0309	0.288	0.396	0.0397	NA	NA	NA	NA
MW-1	08/10/07	**1.031**	<0.05	0.167	0.1945	<0.05	NA	NA	NA	NA
MW-1	11/15/07	Not Sampled Due to the Presence of PSH								
MW-1	02/29/08	0.0033	<0.002	<0.001	<0.002	<0.001	3.68	3.44	<1.5	7.12
MW-1	05/28/08	Not Sampled Due to the Presence of PSH								
MW-1	08/21/08	Not Sampled Due to the Presence of PSH								
MW-1	11/08/08	Not Sampled Due to the Presence of PSH								
MW-1	02/10/09	**0.4048**	0.0022	0.0436	0.0166	<0.001	3.71	<2.5	<2.5	3.71
MW-1	05/15/09	**0.5686**	<0.002	0.0719	0.0561	<0.001	NA	NA	NA	NA
MW-1	0813/09	**0.2665**	<0.02	0.0628	0.0341	<0.1	NA	NA	NA	NA
MW-1	11/11/09	Not Sampled Due to the Presence of PSH								
MW-2	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-2	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-2	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-2	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-2	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-2	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-2	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-2	05/06/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-2	08/18/04	Well placed in annual sampling program								
MW-2	03/22/05	Not Sampled Due to Sample Reduction								
MW-2	05/17/05	Not Sampled Due to Sample Reduction								
MW-2	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-2	11/18/05	Not Sampled Due to Sample Reduction								
MW-2	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-2	05/22/06	Not Sampled								
MW-2	08/07/06	Not Sampled								
MW-2	02/28/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-2	05/11/07	Not Sampled Due to Sample Reduction								
MW-2	08/10/07	Not Sampled Due to Sample Reduction								
MW-2	11/15/07	Not Sampled Due to Sample Reduction								
MW-2	02/29/08	<0.001	<0.002	0.001	<0.002	<0.001	<1.5	3.51	3.15	6.66
MW-2	05/28/08	Not Sampled Due to Sample Reduction								
MW-2	08/21/08	Not Sampled Due to Sample Reduction								
MW-2	11/08/08	Not Sampled Due to Sample Reduction								
MW-2	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-2	05/14/09	Not Sampled Due to Sample Reduction								
MW-2	08/12/09	Not Sampled Due to Sample Reduction								
MW-2	11/11/09	Not Sampled Due to Sample Reduction								

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline	Diesel	Oil	Total
MW-3	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	11/10/03	0.005	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	11/25/03	0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	05/06/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	08/18/04	Well placed in annual sampling program								
MW-3	03/22/05	Not Sampled Due to Sample Reduction								
MW-3	05/17/05	Not Sampled Due to Sample Reduction								
MW-3	08/15/05	0.00976	0.00189	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	11/18/05	Not Sampled Due to Sample Reduction								
MW-3	02/16/06	0.00816	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-3	05/22/06	Not Sampled								
MW-3	08/07/06	Not Sampled								
MW-3	11/21/06	Not Sampled								
MW-3	02/28/07	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-3	05/11/07	Not Sampled Due to Sample Reduction								
MW-3	08/10/07	Not Sampled Due to Sample Reduction								
MW-3	11/15/07	Not Sampled Due to Sample Reduction								
MW-3	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-3	05/28/08	Not Sampled Due to Sample Reduction								
MW-3	08/21/08	Not Sampled Due to Sample Reduction								
MW-3	11/08/08	Not Sampled Due to Sample Reduction								
MW-3	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-3	05/14/09	Not Sampled Due to Sample Reduction								
MW-3	08/12/09	Not Sampled Due to Sample Reduction								
MW-3	11/11/09	Not Sampled Due to Sample Reduction								
MW-4	09/30/02	**2.43**	0.74	0.466	**0.946**	**0.284**	NA	NA	NA	NA
MW-4	11/06/02	**3.96**	0.015	0.174	**0.58**	**0.108**	NA	NA	NA	NA
MW-4	02/27/03	Not Sampled Due to the Presence of PSH								
MW-4	05/12/03	**1.88**	0.004	0.723	0.548	0.056	NA	NA	NA	NA
MW-4	08/20/03	Not Sampled Due to the Presence of PSH								
MW-4	11/10/03	**0.408**	0.001	0.011	0.011	0.001	NA	NA	NA	NA
MW-4	02/17/04	**0.069**	0.001	0.003	0.004	0.001	NA	NA	NA	NA
MW-4	05/06/04	**0.549**	0.213	0.394	0.296	0.194	NA	NA	NA	NA
MW-4	08/18/04	Not Sampled Due to the Presence of PSH								
MW-4	11/02/04	**0.745**	<0.001	0.00856	0.00648	0.00364	NA	NA	NA	NA
MW-4	03/22/05	Not Sampled Due to Sample Reduction								
MW-4	05/17/05	Not Sampled Due to Sample Reduction								
MW-4	08/15/05	0.00375	<0.001	0.02	0.0412	0.00844	NA	NA	NA	NA
MW-4	11/18/05	**0.103**	<0.001	0.0909	0.0727	<0.001	NA	NA	NA	NA
MW-4	02/16/06	**0.0282**	<0.001	0.122	0.11	<0.001	NA	NA	NA	NA
MW-4	05/22/06	**0.0854**	<0.001	0.355	0.224	<0.001	NA	NA	NA	NA
MW-4	08/07/06	**0.0331**	<0.001	0.139	0.112	<0.001	NA	NA	NA	NA
MW-4	11/21/06	**0.0361**	<0.005	0.252	0.105	<0.005	NA	NA	NA	NA
MW-4	02/28/07	**0.0221**	<0.001	0.0142	0.116		NA	NA	NA	NA
MW-4	05/11/07	**0.039**	0.00629	0.336	0.187	0.00725	NA	NA	NA	NA
MW-4	08/10/07	**0.0171**	<0.01	0.3113	0.1332	<0.01	NA	NA	NA	NA
MW-4	11/15/07	**0.0108**	<0.002	<0.001	<0.002	0.0031	NA	NA	NA	NA
MW-4	02/29/08	**0.0578**	<0.002	0.065	0.0047	<0.001	<1.5	<1.5	<1.5	<1.5
MW-4	05/28/08	Not Sampled Due to the Presence of PSH								
MW-4	08/21/08	**0.0232**	<0.002	0.0303	0.022	0.0147	NA	NA	NA	NA
MW-4	11/08/08	**0.0374**	<0.002	0.0041	<0.002	<0.001	NA	NA	NA	NA
MW-4	02/10/09	**0.0539**	<0.002	0.0206	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-4	05/15/09	**0.0632**	0.0043	0.1016	0.0232	<0.001	NA	NA	NA	NA
MW-4	08/12/09	**0.0322**	<0.002	0.035	0.0024	0.0025	NA	NA	NA	NA
MW-4	11/11/09	**0.0725**	<0.002	0.0414	0.0074	<0.001	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline	Diesel	Oil	Total
MW-5	09/30/02	Not Sampled Due to the Presence of PSH								
MW-5	11/06/02	Not Sampled Due to the Presence of PSH								
MW-5	02/27/03	Not Sampled Due to the Presence of PSH								
MW-5	05/12/03	**0.226**	0.01	0.399	**0.704**	**0.567**	NA	NA	NA	NA
MW-5	08/20/03	Not Sampled Due to the Presence of PSH								
MW-5	11/10/03	**0.511**	<0.001	**1.07**	**0.625**	**0.02**	NA	NA	NA	NA
MW-5	02/17/04	**0.445**	0.048	**3.33**	**3.01**	**0.153**	NA	NA	NA	NA
MW-5	05/06/04	**0.0744**	0.0207	0.222	0.273	0.148	NA	NA	NA	NA
MW-5	08/24/04	**0.156**	0.00385	0.232	0.161	0.124	NA	NA	NA	NA
MW-5	11/02/04	**0.371**	<0.001	0.0209	0.0407	0.00102	NA	NA	NA	NA
MW-5	03/22/05	Not Sampled Due to Sample Reduction								
MW-5	05/17/05	Not Sampled Due to Sample Reduction								
MW-5	08/15/05	Not Sampled Due to Sample Reduction								
MW-5	11/18/05	**0.0886**	<0.001	0.0448	0.0394	0.018	NA	NA	NA	NA
MW-5	02/16/06	**0.0108**	<0.001	0.00861	0.002	0.00202	NA	NA	NA	NA
MW-5	05/22/06	<0.001	<0.001	0.00152	<0.002	<0.001	NA	NA	NA	NA
MW-5	08/07/06	**0.0386**	<0.001	0.0619	0.0669	0.0204	NA	NA	NA	NA
MW-5	11/21/06	Not Sampled								
MW-5	02/28/07	**0.36**	<0.005	0.412	**5.04**		NA	NA	NA	NA
MW-5	05/11/07	**0.397**	0.0141	0.387	**0.291**	**0.196**	NA	NA	NA	NA
MW-5	08/10/07	**0.2765**	<0.025	0.2858	**0.2025**	**0.1315**	NA	NA	NA	NA
MW-5	11/15/07	0.0039	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-5	02/29/08	0.003	<0.002	0.0036	0.003	0.0018	9.46	11.7	<1.5	21.16
MW-5	05/28/08	Not Sampled Due to the Presence of PSH								
MW-5	08/21/08	**0.0107**	<0.002	0.0032	<0.002	0.0027	NA	NA	NA	NA
MW-5	11/08/08	**0.2551**	<0.01	0.2323	0.164	0.1145	NA	NA	NA	NA
MW-5	02/10/09	**0.2425**	<0.01	0.2885	0.1932	0.117	4.47	<2.5	<2.5	4.47
MW-5	05/15/09	**0.2339**	0.0234	0.1006	0.1087	0.0782	NA	NA	NA	NA
MW-5	08/12/09	**0.2247**	<0.01	0.2958	0.1891	0.1264	NA	NA	NA	NA
MW-5	11/11/09	Not Sampled Due to the Presence of PSH								
MW-6	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-6	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-6	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-6	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-6	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-6	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	05/06/04	0.00426	<0.001	<0.001	0.00254	0.0013	NA	NA	NA	NA
MW-6	08/18/04	Well placed in annual sampling program								
MW-6	11/02/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	03/22/05	Not Sampled Due to Sample Reduction								
MW-6	05/17/05	Not Sampled Due to Sample Reduction								
MW-6	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	11/18/05	Not Sampled Due to Sample Reduction								
MW-6	02/16/06	0.00133	<0.001	0.00298	<0.002	<0.001				
MW-6	05/22/06	Not Sampled								
MW-6	08/07/06	Not Sampled								
MW-6	11/21/06	Not Sampled								
MW-6	02/28/07	<0.001	<0.001	<0.001	0.0027		NA	NA	NA	NA
MW-6	05/11/07	0.0007 (J)	0.000698 (J)	0.00211	0.000687 (J)	0.00672	NA	NA	NA	NA
MW-6	08/10/07	0.0012	<0.001	0.0059	<0.002	0.0014	NA	NA	NA	NA
MW-6	11/15/07	<0.001	<0.002	0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-6	05/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	08/21/08	0.0017	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	11/08/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-6	05/15/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	08/13/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline	Diesel	Oil	Total
MW-7	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-7	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-7	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-7	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-7	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-7	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	05/06/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	08/18/04	Well placed in annual sampling program								
MW-7	03/22/05	Not Sampled Due to Sample Reduction								
MW-7	05/17/05	Not Sampled Due to Sample Reduction								
MW-7	08/15/05	0.0059	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	11/18/05	Not Sampled Due to Sample Reduction								
MW-7	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-7	05/22/06	Not Sampled								
MW-7	08/07/06	Not Sampled								
MW-7	11/21/06	Not Sampled					NA	NA	NA	NA
MW-7	02/28/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-7	05/11/07	Not Sampled Due to Sample Reduction								
MW-7	08/10/07	Not Sampled Due to Sample Reduction								
MW-7	11/15/07	Not Sampled Due to Sample Reduction								
MW-7	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-7	05/28/08	Not Sampled Due to Sample Reduction								
MW-7	08/21/08	Not Sampled Due to Sample Reduction								
MW-7	11/08/08	Not Sampled Due to Sample Reduction								
MW-7	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-7	05/14/09	Not Sampled Due to Sample Reduction								
MW-7	08/12/09	Not Sampled Due to Sample Reduction								
MW-7	11/11/09	Not Sampled Due to Sample Reduction								
MW-8	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-8	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-8	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-8	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-8	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-8	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-8	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-8	05/06/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-8	08/18/04	Well placed in annual sampling program								
MW-8	03/22/05	Not Sampled Due to Sample Reduction								
MW-8	05/17/05	Not Sampled Due to Sample Reduction								
MW-8	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-8	11/18/05	Not Sampled Due to Sample Reduction								
MW-8	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-8	05/22/06	Not Sampled								
MW-8	08/07/06	Not Sampled								
MW-8	11/21/06	Not Sampled								
MW-8	02/28/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-8	05/11/07	Not Sampled Due to Sample Reduction								
MW-8	08/10/07	Not Sampled Due to Sample Reduction								
MW-8	11/15/07	Not Sampled Due to Sample Reduction								
MW-8	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-8	05/28/08	Not Sampled Due to Sample Reduction								
MW-8	08/21/08	Not Sampled Due to Sample Reduction								
MW-8	11/08/08	Not Sampled Due to Sample Reduction								
MW-8	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-8	05/14/09	Not Sampled Due to Sample Reduction								
MW-8	08/12/09	Not Sampled Due to Sample Reduction								
MW-8	11/11/09	Not Sampled Due to Sample Reduction								

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline	Diesel	Oil	Total
MW-9	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-9	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-9	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-9	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-9	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-9	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	02/17/04	0.003	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	05/06/04	0.00267	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	08/18/04	Well placed in annual sampling program								
MW-9	11/02/04	**0.136**	<0.001	<0.001	0.0116	0.00951	NA	NA	NA	NA
MW-9	03/22/05	**0.0146**	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	05/17/05	0.0036	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	11/18/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	05/22/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	08/07/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	11/21/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	02/28/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-9	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-9	08/10/07	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	11/15/07	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-9	05/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	08/21/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	11/08/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-9	05/15/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	0813/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-10	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-10	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-10	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-10	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-10	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	05/06/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	08/18/04	Well placed in annual sampling program								
MW-10	03/22/05	Not Sampled Due to Sample Reduction								
MW-10	05/17/05	Not Sampled Due to Sample Reduction								
MW-10	08/15/05	**0.0251**	0.0106	0.00197	0.00231	0.00102	NA	NA	NA	NA
MW-10	11/18/05	Not Sampled Due to Sample Reduction								
MW-10	02/16/06	**0.0361**	<0.001	0.00319	<0.002	<0.001	NA	NA	NA	NA
MW-10	05/22/06	**0.151**	<0.001	0.00279	<0.002	<0.001	NA	NA	NA	NA
MW-10	08/07/06	**0.0247**	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	11/21/06	0.00557	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	02/28/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-10	05/11/07	0.00145	<0.001	0.000361 (J)	<0.001	<0.001	NA	NA	NA	NA
MW-10	08/10/07	0.002	<0.001	0.0028	<0.002	<0.001	NA	NA	NA	NA
MW-10	11/15/07	0.004	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-10	05/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	08/21/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	11/08/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-10	05/14/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	08/12/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline	Diesel	Oil	Total
MW-11	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-11	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-11	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-11	08/20/03	**0.147**	<0.001	0.069	0.069	0.033	NA	NA	NA	NA
MW-11	11/10/03	**0.526**	<0.001	<0.001	0.08	0.047	NA	NA	NA	NA
MW-11	02/17/04	**0.103**	<0.001	<0.001	0.013	0.007	NA	NA	NA	NA
MW-11	05/06/04	**2.05**	<0.005	0.253	0.137	0.119	NA	NA	NA	NA
MW-11	08/18/04	**0.0973**	<0.001	<0.001	0.00263	0.00137	NA	NA	NA	NA
MW-11	11/02/04	**0.087**	<0.001	0.00163	<0.002	<0.001	NA	NA	NA	NA
MW-11	03/22/05	**0.0246**	<0.001	0.00163	<0.002	<0.001	NA	NA	NA	NA
MW-11	05/17/05	**0.0263**	<0.001	0.00353	<0.002	<0.001	NA	NA	NA	NA
MW-11	08/15/05	**0.0127**	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	11/18/05	0.00922	<0.001	0.00115	<0.002	<0.001	NA	NA	NA	NA
MW-11	02/16/06	0.00283	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	05/22/06	0.00173	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	08/07/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	11/21/06	0.00166	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	02/28/07	<0.001	<0.001	<0.001	0.0039		NA	NA	NA	NA
MW-11	05/11/07	0.00348	0.00089 (J)	0.000537 (J)	<0.001	0.000277 (J)	NA	NA	NA	NA
MW-11	08/10/07	<0.001	<0.001	<0.001	<0.002	0.0011	NA	NA	NA	NA
MW-11	11/15/07	0.0021	<0.002	0.0014	0.0022	0.0076	NA	NA	NA	NA
MW-11	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-11	05/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	08/21/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	11/08/08	0.0012	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-11	05/14/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	08/12/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	11/06/02	**2.3**	0.012	0.005	0.292	0.092	NA	NA	NA	NA
MW-12	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-12	05/12/03	**0.24**	<0.001	<0.001	0.008	0.015	NA	NA	NA	NA
MW-12	08/20/03	**0.257**	<0.001	<0.001	0.072	0.013	NA	NA	NA	NA
MW-12	11/10/03	**0.544**	<0.001	<0.001	<0.002	0.01	NA	NA	NA	NA
MW-12	02/17/04	**1.21**	<0.001	<0.001	0.009	0.002	NA	NA	NA	NA
MW-12	05/06/04	**1.17**	<0.002	0.0659	0.117	0.0304	NA	NA	NA	NA
MW-12	08/18/04	**0.0612**	<0.001	0.0222	<0.001	<0.001	NA	NA	NA	NA
MW-12	11/02/04	**0.0322**	<0.001	0.00253	<0.002	<0.001	NA	NA	NA	NA
MW-12	03/22/05	0.00545	<0.001	0.00366	<0.002	<0.001	NA	NA	NA	NA
MW-12	05/17/05	0.00103	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	11/18/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	05/22/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	08/07/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	11/21/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	02/28/07	<0.001	<0.001	<0.001	0.0031		NA	NA	NA	NA
MW-12	05/11/07	0.00205	0.000858 (J)	0.000546 (J)	<0.001	0.000378 (J)	NA	NA	NA	NA
MW-12	08/10/07	<0.005	<0.005	<0.005	<0.01	<0.005	NA	NA	NA	NA
MW-12	11/15/07	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	02/29/08	0.0011	<0.002	<0.001	<0.002	0.003	<1.5	<1.5	<1.5	<1.5
MW-12	05/28/08	<0.001	<0.002	<0.001	<0.002	0.002	NA	NA	NA	NA
MW-12	08/21/08	**0.0518**	<0.002	0.0398	0.0036	<0.001	NA	NA	NA	NA
MW-12	11/08/08	0.0033	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-12	05/14/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	08/12/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	11/11/09	0.002	<0.002	0.002	<0.002	0.0071	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline	Diesel	Oil	Total
MW-13	11/06/02	**0.08**	<0.001	<0.001	0.002	0.001	NA	NA	NA	NA
MW-13	02/27/03	**2.14**	0.001	0.095	**0.711**	**0.111**	NA	NA	NA	NA
MW-13	05/12/03	**1.65**	0.001	0.202	0.069	0.17	NA	NA	NA	NA
MW-13	08/20/03	**1.71**	<0.001	0.138	0.015	0.511	NA	NA	NA	NA
MW-13	11/10/03	**1.55**	<0.001	0.084	0.003	0.002	NA	NA	NA	NA
MW-13	02/17/04	**0.043**	<0.001	0.015	0.003	<0.001	NA	NA	NA	NA
MW-13	05/06/04	**0.0873**	<0.001	<0.001	0.00274	0.00242	NA	NA	NA	NA
MW-13	08/18/04	**0.0903**	<0.001	0.00982	<0.002	<0.001	NA	NA	NA	NA
MW-13	11/02/04	**0.233**	<0.001	0.00348	0.00464	0.0038	NA	NA	NA	NA
MW-13	03/22/05	**0.18**	<0.001	0.00239	<0.002	<0.001	NA	NA	NA	NA
MW-13	05/17/05	**0.0758**	<0.001	0.00277	<0.002	<0.001	NA	NA	NA	NA
MW-13	08/15/05	0.00668	<0.001	0.00121	<0.002	<0.001	NA	NA	NA	NA
MW-13	11/18/05	0.00134	<0.001	0.00121	<0.002	<0.001	NA	NA	NA	NA
MW-13	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	05/22/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	08/07/06	0.0013	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	11/21/06	0.00214	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	02/28/07	<0.001	0.0022	0.0049	0.112		NA	NA	NA	NA
MW-13	05/11/07	0.000684 (J)	0.000352 (J)	0.00293	0.000972 (J)	0.00625	NA	NA	NA	NA
MW-13	08/10/07	<0.005	<0.005	<0.005	<0.01	0.0079	NA	NA	NA	NA
MW-13	11/15/07	0.0013	<0.002	<0.001	<0.002	0.007	NA	NA	NA	NA
MW-13	02/29/08	<0.001	<0.002	<0.001	<0.002	0.0028	<1.5	<1.5	<1.5	<1.5
MW-13	05/28/08	<0.001	<0.002	<0.001	<0.002	0.0018	NA	NA	NA	NA
MW-13	08/21/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	11/08/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-13	05/14/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	08/12/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-14	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-14	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-14	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-14	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	05/06/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	08/18/04	<0.001	<0.001	<0.001	0.0157	0.00796	NA	NA	NA	NA
MW-14	11/02/04	**0.0106**	<0.001	<0.001	0.00618	0.00537	NA	NA	NA	NA
MW-14	03/22/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	05/17/05	0.00906	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	11/18/05	0.00494	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	05/22/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	08/07/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	11/21/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	02/28/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-14	05/11/07	0.000836 (J)	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-14	08/10/07	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	11/15/07	0.0012	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-14	05/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	08/21/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	11/08/08	<0.001	0.0023	0.001	<0.002	0.0012	NA	NA	NA	NA
MW-14	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-14	05/14/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	08/12/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA

Table 2

CONCENTRATIONS OF TPH AND BTEX IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-1005
Terracon Project Number A4077008

All concentrations are in mg/l

Well ID	Sample Date	EPA Method SW 846-8260B/8021B					TPH Method 8015M			
		Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline	Diesel	Oil	Total
MW-15	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-15	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-15	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-15	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-15	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	05/06/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	08/24/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	11/02/04	Well placed in annual sampling program								
MW-15	03/22/05	Not Sampled Due to Sample Reduction								
MW-15	05/17/05	Not Sampled Due to Sample Reduction								
MW-15	08/15/05	**0.137**	<0.001	<0.001	0.00927	0.0102	NA	NA	NA	NA
MW-15	11/18/05	Not Sampled Due to Sample Reduction								
MW-15	02/16/06	**0.0693**	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	05/22/06	**0.0183**	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	08/07/06	0.00957	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	11/21/06	0.00546	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	02/28/07	<0.001	<0.001	<0.001	<0.001		NA	NA	NA	NA
MW-15	05/11/07	0.000462 (J)	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
MW-15	08/10/07	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	11/15/07	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	02/29/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5
MW-15	05/28/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	08/21/08	0.0041	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	11/08/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	02/10/09	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-15	05/14/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	08/12/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	11/11/09	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
TMW-1	11/02/04	**4.95**	**2.78**	**1.72**	**2.71**	**0.783**	NA	NA	NA	NA
TMW-1	11/18/05	**1.86**	<0.002	**1.06**	**1.71**	**0.435**	NA	NA	NA	NA
TMW-1	02/16/06	**1.69**	<0.002	**1.03**	**2.19**	**0.604**	NA	NA	NA	NA
TMW-1	05/22/06	Not Sampled								
TMW-1	08/07/06	Not Sampled								
TMW-1	11/21/06	Not Sampled								
TMW-1	02/28/07	**1.66**	<0.05	**0.777**	**1.6**		NA	NA	NA	NA
TMW-1	05/11/07	**0.843**	0.334	**1.03**	**2.75**	**0.439**	NA	NA	NA	NA
TMW-1	08/10/07	Not Sampled Due to the Presence of PSH								
TMW-1	11/15/07	Not Sampled Due to the Presence of PSH								
TMW-1	02/29/08	**3.004**	<0.04	**1.046**	**1.838**	0.0402	16.6	7.06	<1.5	23.66
TMW-1	05/28/08	Not Sampled Due to the Presence of PSH								
TMW-1	08/21/08	Not Sampled Due to the Presence of PSH								
TMW-1	11/08/08	Not Sampled Due to the Presence of PSH								
TMW-1	02/25/09	**2.044**	**<2**	**<1**	**<2**	**<1**	32.7	44.3	4	81
TMW-1	05/14/09	Not Sampled Due to the Presence of PSH								
TMW-1	08/12/09	Not Sampled Due to the Presence of PSH								
TMW-1	11/11/09	Not Sampled Due to the Presence of PSH								
EB-1	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA
NMWQCC Groundwater		**0.01**	**0.75**	**0.75**	**0.62**		**NE**	**NE**	**NE**	**NE**

BTEX - Benzene, Toluene, Ethylbenzene, and Xylenes
NMWQCC - New Mexico Water Quality Control Commission
Results in **BOLD** are above the NMWQCC Groundwater Standards
PSH - Phase Separated Hydrocarbons

TABLE 3

CONCENTRATIONS OF PAHs IN GROUNDWATER
Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-11005
Terracon Project Number A4077008

All concentrations are in mg/l

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8270C and 3510																		
		Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(j,k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene	2-Methyl-naphthalene	Benzo(k) fluoranthene	1- Methyl-naphtalene
MW - 1	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00229	<0.00005	0.0000136	0.00399	<0.00005	NA	NA	NA
MW - 1	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	0.001	<0.001	0.017	0.012	<0.001	0.028	<0.001	NA
MW - 1	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008
MW - 1	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	0.006
MW - 2	06/18/03	0.000118	<0.00005	0.000061	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000056	0.000078	<0.00005	<0.00005	<0.00005	0.000121	NA	NA	NA
MW - 2	03/22/05	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 2	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 2	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 2	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 2	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 3	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 3	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 3	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	NA
MW - 3	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 3	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 4	06/18/03	0.000156	0.000144	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000498	<0.00005	0.000167	0.000891	<0.00005	NA	NA	NA
MW - 4	11/02/04	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0002	<0.00005	0.0025	0.000227	<0.00005	NA	NA	NA
MW - 4	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000068	<0.00005	<0.00005	0.000251	<0.00005	0.00492	0.000312	<0.00005	NA	NA	NA
MW - 4	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	0.001	<0.001	0.034	0.006	<0.001	0.042	<0.001	NA
MW - 4	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 4	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	0.02	<0.005	<0.005	0.01	<0.005	0.011
MW - 5	06/18/03	0.000732	0.000856	0.00507	0.000459	0.00025	0.000129	<0.00005	0.00007	0.000328	<0.00005	0.000087	0.00268	<0.00005	**0.0403**	<0.00005	0.000284	NA	NA	NA
MW - 5	08/24/04	0.000092	0.00007	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00006	0.000114	<0.00005	<0.00005	0.000419	<0.00005	0.00768	0.000898	<0.00005	NA	NA	NA
MW - 5	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000115	<0.00005	<0.00005	0.000306	<0.00005	0.00136	0.000427	<0.00005	NA	NA	NA
MW - 5	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	0.606	<0.001	0.019	<0.001	<0.001	0.022	<0.001	NA
MW - 5	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	**0.031**	<0.005	<0.005	0.024	<0.005	0.028
MW - 5	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	0.02	<0.005	<0.005	0.01	<0.005	0.011
MW - 6	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 6	11/02/04	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 6	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000126	<0.00005	<0.00005	0.000063	<0.00005	NA	NA	NA
MW - 6	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	NA
MW - 6	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 6	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 7	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 7	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 7	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 7	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 7	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 8	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 8	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 8	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 8	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 8	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Lea County, New Mexico
NMOCD File Number 1R-0398
Plains Pipeline, L. P. SRS Number 2001-11005
Terracon Project Number A4077008

All concentrations are in mg/l

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8270C and 3510																		
		Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(j,k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene	2-Methyl-naphthalene	Benzo(k) fluoranthene	1- Methyl-naphtalene
MW - 9	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 9	03/22/05	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000084	<0.00005	0.000544	0.000058	<0.00005	NA	NA	NA
MW - 9	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 9	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 9	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 9	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 10	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 10	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 10	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 10	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 10	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 11	11/06/02	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 11	08/18/04	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000075	<0.00005	0.0014	0.000154	<0.00005	NA	NA	NA
MW - 11	03/22/05	0.000068	0.000055	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00008	<0.00005	0.00167	0.000296	<0.00005	NA	NA	NA
MW - 11	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 11	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 11	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 11	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 12	11/06/02	0.00007	0.000151	0.000096	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000662	<0.00005	0.000198	0.000722	0.000071	NA	NA	NA
MW - 12	08/18/04	0.000079	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000078	<0.00005	0.000262	0.000246	<0.00005	NA	NA	NA
MW - 12	03/22/05	0.0011	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000166	<0.00005	0.000107	0.000285	<0.00005	NA	NA	NA
MW - 12	02/16/06	0.000055	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000053	<0.00005	<0.00005	0.000174	<0.00005	NA	NA	NA
MW - 12	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 12	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 12	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 13	11/06/02	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000232	<0.00005	<0.00005	NA	NA	NA
MW - 13	08/18/04	0.000139	0.000086	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000141	<0.00005	0.00234	0.000702	<0.00005	NA	NA	NA
MW - 13	03/22/05	0.000105	0.000072	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000366	<0.00005	0.000746	0.000426	<0.00005	NA	NA	NA
MW - 13	02/16/06	0.000079	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000079	<0.00005	0.000064	0.000132	<0.00005	NA	NA	NA
MW - 13	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 13	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 13	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 14	11/06/02	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 14	08/18/04	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00119	0.000079	<0.00005	NA	NA	NA
MW - 14	03/22/05	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000071	<0.00005	<0.00005	NA	NA	NA
MW - 14	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 14	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	0.001	<0.001	NA
MW - 14	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 14	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 15	11/06/02	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 15	08/24/04	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NA	NA
MW - 15	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0033	<0.00005	<0.00005	NA	NA	NA
MW - 15	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 15	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 15	02/09/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TMW - 1	02/16/06	0.00146	0.00147	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00221	<0.00005	<0.00005	0.00818	<0.00005	**0.0886**	0.0149	0.000788	NA	NA	NA
TMW - 1	05/11/07	<0.002	<0.002	<0.004	<0.002	<0.003	<0.002	<0.006	NA	<0.002	<0.001	<0.002	0.008	<0.003	**0.062**	<0.002	<0.002	0.197	<0.002	NA
TMW - 1	02/29/08	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	NA	<0.025	<0.025	<0.025	<0.025	<0.025	**0.069**	<0.025	<0.025	0.04	<0.025	0.042
TMW - 1	02/09/09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.146**	<0.05	<0.05	0.155	<0.05	0.128
NMWQCC Groundwater Standards		NE	NE	NE	NE	0.0007	NE	NE	NE	NE	NE	NE	NE	NE	0.03	NE	NE	NE	NE	NE

PAHs - Polycyclic Aromatic Hydrocarbons
NMWQCC - New Mexico Water Quality Control Commission
NE - Stardards for these constituents has not been established by the NMWQCC

Table 4

Enhanced Bioremediation Parameters for Selected Groundwater Monitor Wells

Plains Pipeline, L.P.
Livingston Ridge-HP Sims
Lea County, NM
Plains Pipeline, L.P. Leak Number 2001-11005
Terracon Project Number 94047445

Measurments are noted in the table

Monitor Well	Date	Temperature (°C)	Conductivity (mS/cm)	DO (%)	DO (mg/l)	pH (pH units)	ORP (mV)
MW-4	05/22/08	20.56	21.23	73.2	6.53	7.20	-39
MW-4	06/24/08	20.28	2.953	42.3	3.79	7.24	-140
MW-4	07/26/08	20.39	2.494	9.7	0.86	6.89	-169
MW-4	08/15/08	20.38	3.055	3.6	0.33	7.13	-177
MW-4	09/24/08	20.27	4.532	4.3	0.41	6.82	-21
MW-4	10/22/08	20.18	4.176	12.1	1.08	7.45	-111
MW-4	11/11/08	19.67	3.875	15.5	1.37	7.21	-192
MW-4	12/22/08	19.70	3.553	29.7	2.61	7.27	-42
MW-4	03/28/09	20.34	2.452	30.9	2.75	7.19	-81.1
MW-4	06/17/09	21.08	1.985	11.5	1.02	7.20	-50.2
MW-4	09/08/09	20.30	2.058	39.9	3.51	6.86	-103.2
MW-9	05/22/08	20.21	5.238	211.4	18.8	10.81	70
MW-9	06/24/08	20.24	5.518	113.7	10.13	8.27	143
MW-9	07/26/08	21.74	0.064	77.5	6.72	6.98	307
MW-9	08/15/08	20.37	5.142	27.4	2.43	8.62	182
MW-9	09/24/08	20.13	5.135	40.7	3.54	7.14	144
MW-9	10/22/08	19.84	5.059	64.8	5.8	7.76	151
MW-9	11/11/08	19.41	6.283	79.3	7.15	7.43	137
MW-9	12/22/08	19.64	6.458	32.8	3.03	7.51	32.3
MW-9	03/28/09	19.32	6.13	38.4	3.47	7.37	21.9
MW-9	06/17/09	20.17	5.514	23.2	2.07	7.31	209.4
MW-9	09/08/09	19.72	5.51	44.2	3.98	6.88	4
MW-11	05/22/08	20.62	3.434	5.2	0.46	6.88	-109
MW-11	06/24/08	20.14	3.71	49.5	4.5	6.90	-51
MW-11	07/26/08	20.64	3.177	9	0.8	6.71	20
MW-11	08/15/08	20.58	3.687	4.1	0.37	6.87	58.3
MW-11	09/24/08	20.90	2.598	6.2	0.53	6.71	-131
MW-11	10/22/08	19.65	3.201	11.4	0.98	7.14	-112
MW-11	11/11/08	19.30	4.193	15.3	1.37	6.98	-42
MW-11	12/22/08	19.68	4.397	10.9	0.99	6.99	-57
MW-11	03/28/09	19.63	4.541	48.7	4.4	7.02	-67.4
MW-11	06/17/09	20.34	4.072	15	1.34	6.96	-35.9
MW-11	09/08/09	19.69	4.548	39.9	3.57	6.78	-30.3

Parameters were collected after monitor wells stabilized (approximately five minutes per well)

APPENDIX C

Laboratory Data Sheets

Analytical Report 324639

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Livingston Ridge

2001-11005

19-FEB-09

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

19-FEB-09

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **324639**
Livingston Ridge
Project Address:

Jason Henry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 324639. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 324639 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 324639

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-14	W	Feb-10-09 10:44		324639-001
MW-15	W	Feb-10-09 11:07		324639-002
MW-11	W	Feb-10-09 11:43		324639-003
MW-13	W	Feb-10-09 12:11		324639-004
MW-12	W	Feb-10-09 12:44		324639-005
MW-10	W	Feb-10-09 13:15		324639-006
MW-3	W	Feb-10-09 13:43		324639-007
MW-7	W	Feb-10-09 14:08		324639-008
MW-2	W	Feb-10-09 14:53		324639-009
MW-6	W	Feb-10-09 15:24		324639-010
MW-9	W	Feb-10-09 15:57		324639-011
MW-8	W	Feb-10-09 16:55		324639-012
MW-4	W	Feb-10-09 17:19		324639-013
MW-5	W	Feb-10-09 17:43		324639-014
MW-1	W	Feb-10-09 18:04		324639-015

Certificate of Analysis Summary 324639
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Jason Henry
Project Location:

Date Received in Lab: Feb-11-09 09:05 am
Report Date: 19-FEB-09
Project Manager: Brent Barron, II

Analysis Requested	*Lab Id:*	324639-001		324639-002		324639-003		324639-004	
	Field Id:	MW-14		MW-15		MW-11		MW-13	
	Depth:								
	Matrix:	WATER		WATER		WATER		WATER	
	Sampled:	Feb-10-09 10:44		Feb-10-09 11:07		Feb-10-09 11:43		Feb-10-09 12:11	
BTEX by EPA 8021B	*Extracted:*	Feb-14-09 12:45		Feb-14-09 12:45		Feb-14-09 12:45		Feb-14-09 12:45	
	Analyzed:	Feb-16-09 20:23		Feb-16-09 20:43		Feb-16-09 21:44		Feb-16-09 22:05	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
m,p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total Xylenes		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total BTEX		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
SVOA PAHs List by EPA 8270C	*Extracted:*	Feb-13-09 12:45		Feb-13-09 12:50		Feb-13-09 12:55		Feb-13-09 13:00	
	Analyzed:	Feb-16-09 10:57		Feb-16-09 11:16		Feb-16-09 11:35		Feb-16-09 11:55	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Acenaphthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Acenaphthylene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Anthracene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)anthracene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)pyrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(b)fluoranthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(k)fluoranthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(g,h,i)perylene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Chrysene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Dibenz(a,h)Anthracene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluoranthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluorene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Indeno(1,2,3-c,d)Pyrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
1-Methylnaphthalene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
2-Methylnaphthalene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Naphthalene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Phenanthrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Pyrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 324639
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Jason Henry
Project Location:

Date Received in Lab: Feb-11-09 09:05 am
Report Date: 19-FEB-09
Project Manager: Brent Barron, II

Analysis Requested									
	Lab Id:	324639-001		324639-002		324639-003		324639-004	
	Field Id:	MW-14		MW-15		MW-11		MW-13	
	Depth:								
	Matrix:	WATER		WATER		WATER		WATER	
	Sampled:	Feb-10-09 10:44		Feb-10-09 11:07		Feb-10-09 11:43		Feb-10-09 12:11	
TPH by SW8015MOD	***Extracted:***	Feb-15-09 14:30		Feb-15-09 14:30		Feb-15-09 14:30		Feb-15-09 14:30	
	Analyzed:	Feb-15-09 19:19		Feb-15-09 19:44		Feb-15-09 20:08		Feb-15-09 20:33	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
C6-C12 Gasoline Range Hydrocarbons		ND	2.50	ND	2.50	ND	2.50	ND	2.50
C12-C28 Diesel Range Hydrocarbons		ND	2.50	ND	2.50	ND	2.50	ND	2.50
C28-C35 Oil Range Hydrocarbons		ND	2.50	ND	2.50	ND	2.50	ND	2.50
Total TPH		ND	2.50	ND	2.50	ND	2.50	ND	2.50

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 324639
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Jason Henry
Project Location:

Date Received in Lab: Feb-11-09 09:05 am
Report Date: 19-FEB-09
Project Manager: Brent Barron, II

Analysis Requested		*Lab Id:*	324639-005		324639-006		324639-007		324639-008	
		Field Id:	MW-12		MW-10		MW-3		MW-7	
		Depth:								
		Matrix:	WATER		WATER		WATER		WATER	
		Sampled:	Feb-10-09 12:44		Feb-10-09 13:15		Feb-10-09 13:43		Feb-10-09 14:08	
BTEX by EPA 8021B		*Extracted:*	Feb-14-09 12:45		Feb-14-09 12:45		Feb-14-09 12:45		Feb-14-09 12:45	
		Analyzed:	Feb-16-09 22:25		Feb-16-09 22:46		Feb-16-09 23:06		Feb-16-09 23:27	
		Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene			ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Toluene			ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene			ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
m,p-Xylenes			ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene			ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total Xylenes			ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total BTEX			ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
SVOA PAHs List by EPA 8270C		*Extracted:*	Feb-13-09 13:05		Feb-13-09 13:10		Feb-13-09 13:15		Feb-13-09 13:20	
		Analyzed:	Feb-16-09 12:14		Feb-16-09 12:34		Feb-16-09 12:53		Feb-16-09 13:12	
		Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Acenaphthene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Acenaphthylene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Anthracene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)anthracene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)pyrene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(b)fluoranthene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(k)fluoranthene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(g,h,i)perylene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Chrysene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Dibenz(a,h)Anthracene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluoranthene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluorene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Indeno(1,2,3-c,d)Pyrene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
1-Methylnaphthalene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
2-Methylnaphthalene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Naphthalene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Phenanthrene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Pyrene			ND	0.005	ND	0.005	ND	0.005	ND	0.005

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 324639
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Jason Henry
Project Location:

Date Received in Lab: Feb-11-09 09:05 am
Report Date: 19-FEB-09
Project Manager: Brent Barron, II

Analysis Requested									
	Lab Id:	324639-005		324639-006		324639-007		324639-008	
	Field Id:	MW-12		MW-10		MW-3		MW-7	
	Depth:								
	Matrix:	WATER		WATER		WATER		WATER	
	Sampled:	Feb-10-09 12:44		Feb-10-09 13:15		Feb-10-09 13:43		Feb-10-09 14:08	
TPH by SW8015MOD	***Extracted:***	Feb-15-09 14:30		Feb-15-09 14:30		Feb-15-09 14:30		Feb-15-09 14:30	
	Analyzed:	Feb-15-09 20:57		Feb-15-09 21:22		Feb-15-09 21:47		Feb-15-09 22:36	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
C6-C12 Gasoline Range Hydrocarbons		ND	2.50	ND	2.50	ND	2.50	ND	2.50
C12-C28 Diesel Range Hydrocarbons		ND	2.50	ND	2.50	ND	2.50	ND	2.50
C28-C35 Oil Range Hydrocarbons		ND	2.50	ND	2.50	ND	2.50	ND	2.50
Total TPH		ND	2.50	ND	2.50	ND	2.50	ND	2.50

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 324639
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Jason Henry
Project Location:

Date Received in Lab: Feb-11-09 09:05 am
Report Date: 19-FEB-09
Project Manager: Brent Barron, II

Analysis Requested		*Lab Id:*	324639-009		324639-010		324639-011		324639-012	
		Field Id:	MW-2		MW-6		MW-9		MW-8	
		Depth:								
		Matrix:	WATER		WATER		WATER		WATER	
		Sampled:	Feb-10-09 14:53		Feb-10-09 15:24		Feb-10-09 15:57		Feb-10-09 16:55	
BTEX by EPA 8021B	*Extracted:*		Feb-14-09 12:45		Feb-14-09 12:45		Feb-14-09 12:45		Feb-14-09 12:45	
	Analyzed:		Feb-16-09 23:47		Feb-17-09 00:08		Feb-17-09 00:28		Feb-17-09 00:49	
	Units/RL:		mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene			ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Toluene			ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene			ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
m,p-Xylenes			ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene			ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total Xylenes			ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total BTEX			ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
SVOA PAHs List by EPA 8270C	*Extracted:*		Feb-13-09 14:10		Feb-13-09 14:15		Feb-13-09 14:20		Feb-13-09 14:25	
	Analyzed:		Feb-16-09 13:32		Feb-16-09 13:51		Feb-16-09 14:11		Feb-16-09 14:30	
	Units/RL:		mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Acenaphthene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Acenaphthylene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Anthracene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)anthracene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)pyrene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(b)fluoranthene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(k)fluoranthene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(g,h,i)perylene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Chrysene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Dibenz(a,h)Anthracene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluoranthene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluorene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Indeno(1,2,3-c,d)Pyrene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
1-Methylnaphthalene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
2-Methylnaphthalene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Naphthalene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Phenanthrene			ND	0.005	ND	0.005	ND	0.005	ND	0.005
Pyrene			ND	0.005	ND	0.005	ND	0.005	ND	0.005

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 324639
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Jason Henry
Project Location:

Date Received in Lab: Feb-11-09 09:05 am
Report Date: 19-FEB-09
Project Manager: Brent Barron, II

Analysis Requested			324639-009		324639-010		324639-011		324639-012	
	Lab Id:		324639-009		324639-010		324639-011		324639-012	
	Field Id:		MW-2		MW-6		MW-9		MW-8	
	Depth:									
	Matrix:		WATER		WATER		WATER		WATER	
	Sampled:		Feb-10-09 14:53		Feb-10-09 15:24		Feb-10-09 15:57		Feb-10-09 16:55	
TPH by SW8015MOD	*Extracted:*		Feb-15-09 14:30		Feb-15-09 14:30		Feb-15-09 14:30		Feb-15-09 14:30	
	Analyzed:		Feb-15-09 23:01		Feb-15-09 23:26		Feb-15-09 23:50		Feb-16-09 00:15	
	Units/RL:		mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
C6-C12 Gasoline Range Hydrocarbons			ND	2.50	ND	2.50	ND	2.50	ND	2.50
C12-C28 Diesel Range Hydrocarbons			ND	2.50	ND	2.50	ND	2.50	ND	2.50
C28-C35 Oil Range Hydrocarbons			ND	2.50	ND	2.50	ND	2.50	ND	2.50
Total TPH			ND	2.50	ND	2.50	ND	2.50	ND	2.50

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 324639
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Jason Henry
Project Location:

Date Received in Lab: Feb-11-09 09:05 am
Report Date: 19-FEB-09
Project Manager: Brent Barron, II

Analysis Requested		*Lab Id:*	324639-013		324639-014		324639-015	
		Field Id:	MW-4		MW-5		MW-1	
		Depth:						
		Matrix:	WATER		WATER		WATER	
		Sampled:	Feb-10-09 17:19		Feb-10-09 17:43		Feb-10-09 18:04	
BTEX by EPA 8021B		*Extracted:*	Feb-14-09 13:15		Feb-14-09 13:15		Feb-14-09 13:15	
		Analyzed:	Feb-17-09 04:55		Feb-17-09 10:44		Feb-17-09 05:16	
		Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL
Benzene			0.0539	0.0010	0.2425	0.0050	0.4048 D	0.0100
Toluene			ND	0.0020	ND	0.0100	0.0022	0.0020
Ethylbenzene			0.0206	0.0010	0.2885	0.0050	0.0436	0.0010
m,p-Xylenes			ND	0.0020	0.1932	0.0100	0.0166	0.0020
o-Xylene			ND	0.0010	0.1170	0.0050	ND	0.0010
Total Xylenes			ND	0.0010	0.3102	0.0050	0.0166	0.0010
Total BTEX			0.0745	0.0010	0.8412	0.0050	0.4672	0.0010
SVOA PAHs List by EPA 8270C		*Extracted:*	Feb-13-09 14:30		Feb-13-09 14:35		Feb-13-09 14:40	
		Analyzed:	Feb-16-09 14:50		Feb-16-09 15:10		Feb-16-09 15:30	
		Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL
Acenaphthene			ND	0.005	ND	0.005	ND	0.005
Acenaphthylene			ND	0.005	ND	0.005	ND	0.005
Anthracene			ND	0.005	ND	0.005	ND	0.005
Benzo(a)anthracene			ND	0.005	ND	0.005	ND	0.005
Benzo(a)pyrene			ND	0.005	ND	0.005	ND	0.005
Benzo(b)fluoranthene			ND	0.005	ND	0.005	ND	0.005
Benzo(k)fluoranthene			ND	0.005	ND	0.005	ND	0.005
Benzo(g,h,i)perylene			ND	0.005	ND	0.005	ND	0.005
Chrysene			ND	0.005	ND	0.005	ND	0.005
Dibenz(a,h)Anthracene			ND	0.005	ND	0.005	ND	0.005
Fluoranthene			ND	0.005	ND	0.005	ND	0.005
Fluorene			ND	0.005	ND	0.005	ND	0.005
Indeno(1,2,3-c,d)Pyrene			ND	0.005	ND	0.005	ND	0.005
1-Methylnaphthalene			0.011	0.005	0.011	0.005	0.006	0.005
2-Methylnaphthalene			0.010	0.005	0.010	0.005	ND	0.005
Naphthalene			0.020	0.005	0.020	0.005	0.007	0.005
Phenanthrene			ND	0.005	ND	0.005	ND	0.005
Pyrene			ND	0.005	ND	0.005	ND	0.005

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 324639
PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Jason Henry
Project Location:

Date Received in Lab: Feb-11-09 09:05 am
Report Date: 19-FEB-09
Project Manager: Brent Barron, II

Analysis Requested									
	Lab Id:	324639-013		324639-014		324639-015		
	Field Id:	MW-4		MW-5		MW-1		
	Depth:							
	Matrix:	WATER		WATER		WATER		
	Sampled:	Feb-10-09 17:19		Feb-10-09 17:43		Feb-10-09 18:04		
TPH by SW8015MOD	***Extracted:***	Feb-15-09 14:30		Feb-15-09 14:30		Feb-15-09 14:30		
	Analyzed:	Feb-16-09 00:39		Feb-16-09 01:04		Feb-16-09 01:28		
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	
C6-C12 Gasoline Range Hydrocarbons		ND	2.50	4.47	2.50	3.71	2.50	
C12-C28 Diesel Range Hydrocarbons		ND	2.50	ND	2.50	ND	2.50	
C28-C35 Oil Range Hydrocarbons		ND	2.50	ND	2.50	ND	2.50	
Total TPH		ND	2.50	4.47	2.50	3.71	2.50	

Brent Barron
Odessa Laboratory Director

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Outside XENCO's scope of NELAC Accreditation.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 324639, **Project ID:** 2001-11005

Lab Batch #: 749738 **Sample:** 324639-013 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0337	0.0300	112	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 749738 **Sample:** 324639-013 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 749738 **Sample:** 324639-013 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 749738 **Sample:** 324639-014 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 749738 **Sample:** 324639-015 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0365	0.0300	122	80-120	**
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.017

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 324639,

Project ID: 2001-11005

Lab Batch #: 749738 **Sample:** 524842-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0247	0.0300	82	80-120	

Lab Batch #: 749738 **Sample:** 524842-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 749738 **Sample:** 524842-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 749744 **Sample:** 324636-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 749744 **Sample:** 324636-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.017

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 324639, **Project ID:** 2001-11005

Lab Batch #: 749744 **Sample:** 324639-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

Lab Batch #: 749744 **Sample:** 324639-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 749744 **Sample:** 324639-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 749744 **Sample:** 324639-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

Lab Batch #: 749744 **Sample:** 324639-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0335	0.0300	112	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.017

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 324639,

Project ID: 2001-11005

Lab Batch #: 749744 **Sample:** 324639-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0319	0.0300	106	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 749744 **Sample:** 324639-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0266	0.0300	89	80-120	

Lab Batch #: 749744 **Sample:** 324639-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 749744 **Sample:** 324639-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 749744 **Sample:** 324639-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.017

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 324639, **Project ID:** 2001-11005

Lab Batch #: 749744 **Sample:** 324639-011 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 749744 **Sample:** 324639-012 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 749744 **Sample:** 524845-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 749744 **Sample:** 524845-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 749744 **Sample:** 524845-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.017

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 324639,

Project ID: 2001-11005

Lab Batch #: 749934 **Sample:** 324639-015 / DL **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0255	0.0300	85	80-120	

Lab Batch #: 749934 **Sample:** 324982-004 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

Lab Batch #: 749934 **Sample:** 324982-004 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

Lab Batch #: 749934 **Sample:** 524953-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	

Lab Batch #: 749934 **Sample:** 524953-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.017

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 324639, **Project ID:** 2001-11005

Lab Batch #: 749934 **Sample:** 524953-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

Lab Batch #: 749676 **Sample:** 324639-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.036	0.050	72	43-116	
Nitrobenzene-d5	0.031	0.050	62	35-114	
Terphenyl-D14	0.035	0.050	70	33-141	

Lab Batch #: 749676 **Sample:** 324639-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.038	0.050	76	43-116	
Nitrobenzene-d5	0.033	0.050	66	35-114	
Terphenyl-D14	0.040	0.050	80	33-141	

Lab Batch #: 749676 **Sample:** 324639-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.038	0.050	76	43-116	
Nitrobenzene-d5	0.033	0.050	66	35-114	
Terphenyl-D14	0.040	0.050	80	33-141	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.017

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 324639,

Project ID: 2001-11005

Lab Batch #: 749676 **Sample:** 324639-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.027	0.050	54	43-116	
Nitrobenzene-d5	0.021	0.050	42	35-114	
Terphenyl-D14	0.034	0.050	68	33-141	

Lab Batch #: 749676 **Sample:** 324639-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.026	0.050	52	43-116	
Nitrobenzene-d5	0.021	0.050	42	35-114	
Terphenyl-D14	0.034	0.050	68	33-141	

Lab Batch #: 749676 **Sample:** 324639-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.037	0.050	74	43-116	
Nitrobenzene-d5	0.033	0.050	66	35-114	
Terphenyl-D14	0.038	0.050	76	33-141	

Lab Batch #: 749676 **Sample:** 324639-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.030	0.050	60	43-116	
Nitrobenzene-d5	0.023	0.050	46	35-114	
Terphenyl-D14	0.031	0.050	62	33-141	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.017

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 324639,

Project ID: 2001-11005

Lab Batch #: 749676 **Sample:** 324639-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.034	0.050	68	43-116	
Nitrobenzene-d5	0.028	0.050	56	35-114	
Terphenyl-D14	0.036	0.050	72	33-141	

Lab Batch #: 749676 **Sample:** 324639-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.037	0.050	74	43-116	
Nitrobenzene-d5	0.031	0.050	62	35-114	
Terphenyl-D14	0.038	0.050	76	33-141	

Lab Batch #: 749676 **Sample:** 324639-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.034	0.050	68	43-116	
Nitrobenzene-d5	0.028	0.050	56	35-114	
Terphenyl-D14	0.038	0.050	76	33-141	

Lab Batch #: 749676 **Sample:** 324639-011 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.038	0.050	76	43-116	
Nitrobenzene-d5	0.033	0.050	66	35-114	
Terphenyl-D14	0.040	0.050	80	33-141	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.017

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 324639,

Project ID: 2001-11005

Lab Batch #: 749676 **Sample:** 324639-012 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.036	0.050	72	43-116	
Nitrobenzene-d5	0.029	0.050	58	35-114	
Terphenyl-D14	0.037	0.050	74	33-141	

Lab Batch #: 749676 **Sample:** 324639-013 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.038	0.050	76	43-116	
Nitrobenzene-d5	0.032	0.050	64	35-114	
Terphenyl-D14	0.038	0.050	76	33-141	

Lab Batch #: 749676 **Sample:** 324639-014 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.037	0.050	74	43-116	
Nitrobenzene-d5	0.032	0.050	64	35-114	
Terphenyl-D14	0.035	0.050	70	33-141	

Lab Batch #: 749676 **Sample:** 324639-015 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.037	0.050	74	43-116	
Nitrobenzene-d5	0.032	0.050	64	35-114	
Terphenyl-D14	0.035	0.050	70	33-141	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.017

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 324639, **Project ID:** 2001-11005

Lab Batch #: 749676 **Sample:** 524712-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.038	0.050	76	43-116	
Nitrobenzene-d5	0.033	0.050	66	35-114	
Terphenyl-D14	0.040	0.050	80	33-141	

Lab Batch #: 749676 **Sample:** 524712-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.042	0.050	84	43-116	
Nitrobenzene-d5	0.037	0.050	74	35-114	
Terphenyl-D14	0.042	0.050	84	33-141	

Lab Batch #: 749676 **Sample:** 524712-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.038	0.050	76	43-116	
Nitrobenzene-d5	0.035	0.050	70	35-114	
Terphenyl-D14	0.039	0.050	78	33-141	

Lab Batch #: 749646 **Sample:** 324636-008 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	12.6	10.0	126	70-135	
o-Terphenyl	5.21	5.00	104	70-135	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.017

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 324639,

Project ID: 2001-11005

Lab Batch #: 749646 **Sample:** 324639-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.87	10.0	89	70-135	
o-Terphenyl	4.76	5.00	95	70-135	

Lab Batch #: 749646 **Sample:** 324639-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.85	10.0	89	70-135	
o-Terphenyl	4.75	5.00	95	70-135	

Lab Batch #: 749646 **Sample:** 324639-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.69	10.0	87	70-135	
o-Terphenyl	4.65	5.00	93	70-135	

Lab Batch #: 749646 **Sample:** 324639-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.84	10.0	88	70-135	
o-Terphenyl	4.75	5.00	95	70-135	

Lab Batch #: 749646 **Sample:** 324639-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.79	10.0	88	70-135	
o-Terphenyl	4.71	5.00	94	70-135	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.017

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 324639,

Project ID: 2001-11005

Lab Batch #: 749646 **Sample:** 324639-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.88	10.0	89	70-135	
o-Terphenyl	4.78	5.00	96	70-135	

Lab Batch #: 749646 **Sample:** 324639-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.53	10.0	85	70-135	
o-Terphenyl	4.55	5.00	91	70-135	

Lab Batch #: 749646 **Sample:** 324639-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.52	10.0	85	70-135	
o-Terphenyl	4.56	5.00	91	70-135	

Lab Batch #: 749646 **Sample:** 324639-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.84	10.0	88	70-135	
o-Terphenyl	4.75	5.00	95	70-135	

Lab Batch #: 749646 **Sample:** 324639-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.86	10.0	89	70-135	
o-Terphenyl	4.75	5.00	95	70-135	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.017

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 324639,

Project ID: 2001-11005

Lab Batch #: 749646 **Sample:** 324639-011 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.91	10.0	89	70-135	
o-Terphenyl	4.77	5.00	95	70-135	

Lab Batch #: 749646 **Sample:** 324639-012 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.71	10.0	87	70-135	
o-Terphenyl	4.67	5.00	93	70-135	

Lab Batch #: 749646 **Sample:** 324639-013 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	9.01	10.0	90	70-135	
o-Terphenyl	4.83	5.00	97	70-135	

Lab Batch #: 749646 **Sample:** 324639-014 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.60	10.0	86	70-135	
o-Terphenyl	4.58	5.00	92	70-135	

Lab Batch #: 749646 **Sample:** 324639-015 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.79	10.0	88	70-135	
o-Terphenyl	4.69	5.00	94	70-135	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.017

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 324639,

Project ID: 2001-11005

Lab Batch #: 749646 **Sample:** 524802-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	12.6	10.0	126	70-135	
o-Terphenyl	5.84	5.00	117	70-135	

Lab Batch #: 749646 **Sample:** 524802-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	11.6	10.0	116	70-135	
o-Terphenyl	6.40	5.00	128	70-135	

Lab Batch #: 749646 **Sample:** 524802-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	12.6	10.0	126	70-135	
o-Terphenyl	5.81	5.00	116	70-135	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.017

BS / BSD Recoveries

Project Name: Livingston Ridge

Work Order #: 324639
Analyst: ASA
Lab Batch ID: 749738 **Sample:** 524842-1-BKS **Batch #:** 1
Units: mg/L

Date Prepared: 02/14/2009
Project ID: 2001-11005
Date Analyzed: 02/17/2009
Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0990	99	0.1	0.1020	102	3	70-125	25	
Toluene	ND	0.1000	0.1001	100	0.1	0.1026	103	2	70-125	25	
Ethylbenzene	ND	0.1000	0.1002	100	0.1	0.1020	102	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.2074	104	0.2	0.2111	106	2	70-131	25	
o-Xylene	ND	0.1000	0.1021	102	0.1	0.1042	104	2	71-133	25	

Analyst: ASA
Lab Batch ID: 749744 **Sample:** 524845-1-BKS **Batch #:** 1
Units: mg/L

Date Prepared: 02/14/2009
Date Analyzed: 02/16/2009
Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0976	98	0.1	0.0991	99	2	70-125	25	
Toluene	ND	0.1000	0.0974	97	0.1	0.0986	99	1	70-125	25	
Ethylbenzene	ND	0.1000	0.0952	95	0.1	0.0970	97	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.1966	98	0.2	0.1989	99	1	70-131	25	
o-Xylene	ND	0.1000	0.0988	99	0.1	0.1000	100	1	71-133	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.017

BS / BSD Recoveries

Project Name: Livingston Ridge

Work Order #: 324639
Analyst: ASA
Lab Batch ID: 749934
Sample: 524953-1-BKS
Units: mg/L

Date Prepared: 02/17/2009
Batch #: 1

Project ID: 2001-11005
Date Analyzed: 02/17/2009
Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0979	98	0.1	0.1041	104	6	70-125	25	
Toluene	ND	0.1000	0.0978	98	0.1	0.1048	105	7	70-125	25	
Ethylbenzene	ND	0.1000	0.0967	97	0.1	0.1041	104	7	71-129	25	
m,p-Xylenes	ND	0.2000	0.2004	100	0.2	0.2159	108	7	70-131	25	
o-Xylene	ND	0.1000	0.1000	100	0.1	0.1073	107	7	71-133	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.017

BS / BSD Recoveries

Project Name: Livingston Ridge

Work Order #: 324639
Analyst: MAA
Lab Batch ID: 749676
Sample: 524712-1-BKS
Date Prepared: 02/13/2009
Batch #: 1
Project ID: 2001-11005
Date Analyzed: 02/16/2009
Matrix: Water
Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Acenaphthene	ND	0.050	0.045	90	0.05	0.043	86	5	54-114	25	
Acenaphthylene	ND	0.050	0.034	68	0.05	0.033	66	3	53-113	25	
Anthracene	ND	0.050	0.041	82	0.05	0.041	82	0	56-116	25	
Benzo(a)anthracene	ND	0.050	0.043	86	0.05	0.042	84	2	59-116	25	
Benzo(a)pyrene	ND	0.050	0.044	88	0.05	0.044	88	0	58-118	25	
Benzo(b)fluoranthene	ND	0.050	0.042	84	0.05	0.044	88	5	54-123	25	
Benzo(k)fluoranthene	ND	0.050	0.042	84	0.05	0.044	88	5	52-122	25	
Benzo(g,h,i)perylene	ND	0.050	0.045	90	0.05	0.046	92	2	47-129	25	
Chrysene	ND	0.050	0.041	82	0.05	0.040	80	2	58-116	25	
Dibenz(a,h)Anthracene	ND	0.050	0.046	92	0.05	0.045	90	2	46-131	25	
Fluoranthene	ND	0.050	0.043	86	0.05	0.042	84	2	55-120	25	
Fluorene	ND	0.050	0.050	100	0.05	0.048	96	4	56-114	25	
Indeno(1,2,3-c,d)Pyrene	ND	0.050	0.046	92	0.05	0.046	92	0	44-132	25	
1-Methylnaphthalene	ND	0.050	0.033	66	0.05	0.034	68	3	47-113	25	
2-Methylnaphthalene	ND	0.050	0.032	64	0.05	0.032	64	0	57-106	25	
Naphthalene	ND	0.050	0.034	68	0.05	0.033	66	3	53-110	25	
Phenanthrene	ND	0.050	0.037	74	0.05	0.037	74	0	56-116	25	
Pyrene	ND	0.050	0.041	82	0.05	0.039	78	5	57-119	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.017

BS / BSD Recoveries

Project Name: Livingston Ridge

Work Order #: 324639
Analyst: BHW
Lab Batch ID: 749646
Sample: 524802-1-BKS
Units: mg/L

Date Prepared: 02/15/2009
Batch #: 1

Project ID: 2001-11005
Date Analyzed: 02/15/2009
Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY.

TPH by SW8015MOD Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	100	117	117	100	118	118	1	70-135	25	
C12-C28 Diesel Range Hydrocarbons	ND	100	108	108	100	109	109	1	70-135	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.017

Form 3 - MS Recoveries

Project Name: Livingston Ridge

Work Order #: 324639
Lab Batch #: 749646
Date Analyzed: 02/16/2009
QC- Sample ID: 324636-008 S
Reporting Units: mg/L

Date Prepared: 02/15/2009
Batch #: 1

Project ID: 2001-11005
Analyst: BHW
Matrix: Water

TPH by Texas1005 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	100	130	130	70-135	
C12-C28 Diesel Range Hydrocarbons	ND	100	119	119	70-135	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

Version: 1.017

Form 3 - MS / MSD Recoveries

Project Name: Livingston Ridge

Work Order # : 324639 **Project ID:** 2001-11005

Lab Batch ID: 749738 **QC- Sample ID:** 324639-013 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 02/17/2009 **Date Prepared:** 02/14/2009 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0539	0.1000	0.1430	89	0.1000	0.1517	98	10	70-125	25	
Toluene	ND	0.1000	0.0871	87	0.1000	0.0914	91	4	70-125	25	
Ethylbenzene	0.0206	0.1000	0.1100	89	0.1000	0.1154	95	7	71-129	25	
m,p-Xylenes	ND	0.2000	0.1806	90	0.2000	0.1861	93	3	70-131	25	
o-Xylene	ND	0.1000	0.0899	90	0.1000	0.0935	94	4	71-133	25	

Lab Batch ID: 749744 **QC- Sample ID:** 324636-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 02/17/2009 **Date Prepared:** 02/14/2009 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1023	102	0.1000	0.0976	98	4	70-125	25	
Toluene	ND	0.1000	0.1009	101	0.1000	0.0962	96	5	70-125	25	
Ethylbenzene	ND	0.1000	0.0974	97	0.1000	0.0931	93	4	71-129	25	
m,p-Xylenes	ND	0.2000	0.2000	100	0.2000	0.1911	96	4	70-131	25	
o-Xylene	ND	0.1000	0.1005	101	0.1000	0.0960	96	5	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Version: 1.017

Form 3 - MS / MSD Recoveries

Project Name: Livingston Ridge

Work Order # : 324639 **Project ID:** 2001-11005

Lab Batch ID: 749934 **QC- Sample ID:** 324982-004 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 02/17/2009 **Date Prepared:** 02/17/2009 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1029	103	0.1000	0.0992	99	4	70-125	25	
Toluene	ND	0.1000	0.1016	102	0.1000	0.0990	99	3	70-125	25	
Ethylbenzene	ND	0.1000	0.0992	99	0.1000	0.0982	98	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.2054	103	0.2000	0.2038	102	1	70-131	25	
o-Xylene	ND	0.1000	0.1020	102	0.1000	0.1010	101	1	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Version: 1.017

ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

Terracon
Consulting Engineers & Scientists

Office Location: Midland

Project Manager: Catherine Leeder

Laboratory: Xenco
Address:
Contact:
Phone:
PO/SO #: 110005

Sampler's Name: Chris Aulds

Sampler's Signature:

Proj. No.: A96177007

Project Name: Livingston Ridge

No/Type of Containers: 40/VOA 10/AG

ANALYSIS REQUESTED: BTEX (8021B), TPH (8015M), PAH (8270C)

Lab use only
Due Date:
Temp. of coolers when received (C°): 1 2 3 4 5
Page 1 of 2

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 LL	250 ml	P/O	BTEX	TPH	PAH	Lab Sample ID (Lab Use Only)
W	2/10/09	1044		X	MW-14			4	1			X	X	X	324639-01
		1107			MW-15										-02
		1143			MW-11										-03
		1211			MW-13										-04
		1244			MW-12										-05
		1315			MW-10										-06
		1343			MW-3										-07
		1408			MW-7										-08
		1453			MW-2										-09
		1524			MW-6										-10

Turn around time: [X] Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	2/11/09	0905			
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date: 2/11/09	Time: 0905

NOTES: Plains → Jason Henry

0.5 2

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

Houston Office
11555 Clay Road, Suite 100
Houston, Texas 77043
(713) 690-8989 Fax (713) 690-8787

Dallas Office
8901 Carpenter Freeway, Suite 100
Dallas, Texas 75247
(214) 630-1010 Fax (214) 630-7070

Fort Worth Office
2601 Gravel Drive
Fort Worth, Texas 76118
(817) 268-8600 Fax (817) 268-8602

Austin Office
5307 Industrial Oaks Blvd, # 160
Austin, Texas 78735
(512) 442-1122 Fax (512) 442-1181

Midland Office
24 Smith Rd., # 261
Midland, Texas 79705
(432) 684-9600 Fax (432) 684-9608

ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

Terracon
Consulting Engineers & Scientists

Office Location Midland

Project Manager Cathrine Lundquist

Laboratory: Xenco
Address:
Contact:
Phone:
PO/SO #: 2001-11005

Lab use only
Due Date:
Temp. of coolers when received (C°): 1 2 3 4 5
Page 2 of 2

Sampler's Name: Chris Aulds
Sampler's Signature:

Proj. No.: A407700B
Project Name: Livingston Ridge
No/Type of Containers: 20/VOA 5/AG

ANALYSIS REQUESTED: BTEX (8021B), TPH (8015M), PAH (8270C)

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	Lab Sample ID (Lab Use Only)
W	2/10/09	1557		X	MW-9			4	1			324031-11
		1055			MW-8							-12
		1719			MW-4							-13
		1743			MW-5							-14
		1804			MW-1							-15

Turn around time: ☑ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	2/11/09	0705			
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date: 2/11/09	Time: 0905

NOTES: Jason Henry w/Plains

4.5°C

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

Houston Office: 11555 Clay Road, Suite 100, Houston, Texas 77043, (713) 690-8989 Fax (713) 690-8787
Dallas Office: 8901 Carpenter Freeway, Suite 100, Dallas, Texas 75247, (214) 630-1010 Fax (214) 630-7070
Fort Worth Office: 2601 Gravel Drive, Fort Worth, Texas 76118, (817) 268-8600 Fax (817) 268-8602
Austin Office: 5307 Industrial Oaks Blvd. # 160, Austin, Texas 78735, (512) 442-1122 Fax (512) 442-1181
Midland Office: 24 Smith Rd., # 261, Midland, Texas 79705, (432) 684-9600 Fax (432) 684-9608

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Terracon

Date/ Time: 2-11-07 9:05

Lab ID #: 324657

Initials: AL

Sample Receipt Checklist

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

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

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

Analytical Report 333005

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Livingston Ridge-HP Sims

2001-11005

22-MAY-09

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Miramar, FL E86349
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

22-MAY-09

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **333005**
Livingston Ridge-HP Sims
Project Address:

Jason Henry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 333005. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 333005 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 333005

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge-HP Sims

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-6	W	May-15-09 10:15		333005-001
MW-1	W	May-15-09 10:30		333005-002
MW-9	W	May-15-09 10:48		333005-003
MW-5	W	May-15-09 11:15		333005-004
MW-4	W	May-15-09 11:36		333005-005

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Livingston Ridge-HP Sims

Project ID:	*2001-11005*	*Report Date:*	*22-MAY-09*
Work Order Number:	***333005***	*Date Received:*	*05/15/2009*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: *LBA-759724 BTEX-MTBE EPA 8021B*
SW8021BM

Batch 759724, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis
Samples affected are: 333005-005,333005-004.
4-Bromofluorobenzene recovered below QC limits. Data not confirmed by re-analysis. Samples affected are: 530448-1-BLK,333005-004,333005-001,333005-002. Samples had matrix interference present.

Certificate of Analysis Summary 333005

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge-HP Sims

Project Id: 2001-11005
Contact: Jason Henry
Project Location:

Date Received in Lab: Fri May-15-09 03:10 pm
Report Date: 22-MAY-09
Project Manager: Brent Barron, II

Analysis Requested	*Lab Id:*	333005-001		333005-002		333005-003		333005-004		333005-005	
	Field Id:	MW-6		MW-1		MW-9		MW-5		MW-4	
	Depth:										
	Matrix:	WATER		WATER		WATER		WATER		WATER	
	Sampled:	May-15-09 10:15		May-15-09 10:30		May-15-09 10:48		May-15-09 11:15		May-15-09 11:36	
BTEX by EPA 8021B	*Extracted:*	May-21-09 15:30		May-21-09 15:30		May-21-09 15:30		May-21-09 15:30		May-21-09 15:30	
	Analyzed:	May-21-09 21:08		May-22-09 02:08		May-21-09 21:30		May-22-09 02:30		May-21-09 21:51	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.0010	0.5686	0.0100	ND	0.0010	0.2339	0.0050	0.0632	0.0010
Toluene		ND	0.0020	ND	0.0200	ND	0.0020	0.0234	0.0100	0.0043	0.0020
Ethylbenzene		ND	0.0010	0.0719	0.0100	ND	0.0010	0.1006	0.0050	0.1016	0.0010
m,p-Xylenes		ND	0.0020	0.0561	0.0200	ND	0.0020	0.1087	0.0100	0.0232	0.0020
o-Xylene		ND	0.0010	ND	0.0100	ND	0.0010	0.0782	0.0050	ND	0.0010
Total Xylenes		ND	0.0010	0.0561	0.0100	ND	0.0010	0.1869	0.0050	0.0232	0.0010
Total BTEX		ND	0.0010	0.6966	0.0100	ND	0.0010	0.5448	0.0050	0.1923	0.0010

Brent Barron
Odessa Laboratory Director

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

* Outside XENCO's scope of NELAC Accreditation.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge-HP Sims

Work Orders : 333005,

Project ID: 2001-11005

Lab Batch #: 759724 **Sample:** 530448-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/21/09 16:44

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 759724 **Sample:** 530448-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/21/09 17:05

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 759724 **Sample:** 530448-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/21/09 17:56

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0184	0.0300	61	80-120	*

Lab Batch #: 759724 **Sample:** 333005-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/21/09 21:08

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0213	0.0300	71	80-120	*

Lab Batch #: 759724 **Sample:** 333005-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/21/09 21:30

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge-HP Sims

Work Orders : 333005,

Project ID: 2001-11005

Lab Batch #: 759724 **Sample:** 333005-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/21/09 21:51

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0211	0.0300	70	80-120	*
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

Lab Batch #: 759724 **Sample:** 333005-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 02:08

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0232	0.0300	77	80-120	*

Lab Batch #: 759724 **Sample:** 333005-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 02:30

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0237	0.0300	79	80-120	*
4-Bromofluorobenzene	0.0217	0.0300	72	80-120	*

Lab Batch #: 759724 **Sample:** 333009-003 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 02:51

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

Lab Batch #: 759724 **Sample:** 333009-003 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 03:12

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Livingston Ridge-HP Sims

Work Order #: 333005
Analyst: ASA
Lab Batch ID: 759724
Sample: 530448-1-BKS
Date Prepared: 05/21/2009
Batch #: 1
Project ID: 2001-11005
Date Analyzed: 05/21/2009
Matrix: Water
Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1091	109	0.1	0.1092	109	0	70-125	25	
Toluene	ND	0.1000	0.1112	111	0.1	0.1118	112	1	70-125	25	
Ethylbenzene	ND	0.1000	0.1120	112	0.1	0.1121	112	0	71-129	25	
m,p-Xylenes	ND	0.2000	0.2374	119	0.2	0.2377	119	0	70-131	25	
o-Xylene	ND	0.1000	0.1180	118	0.1	0.1184	118	0	71-133	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: Livingston Ridge-HP Sims

Work Order # : 333005 **Project ID:** 2001-11005

Lab Batch ID: 759724 **QC- Sample ID:** 333009-003 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 05/22/2009 **Date Prepared:** 05/21/2009 **Analyst:** ASA

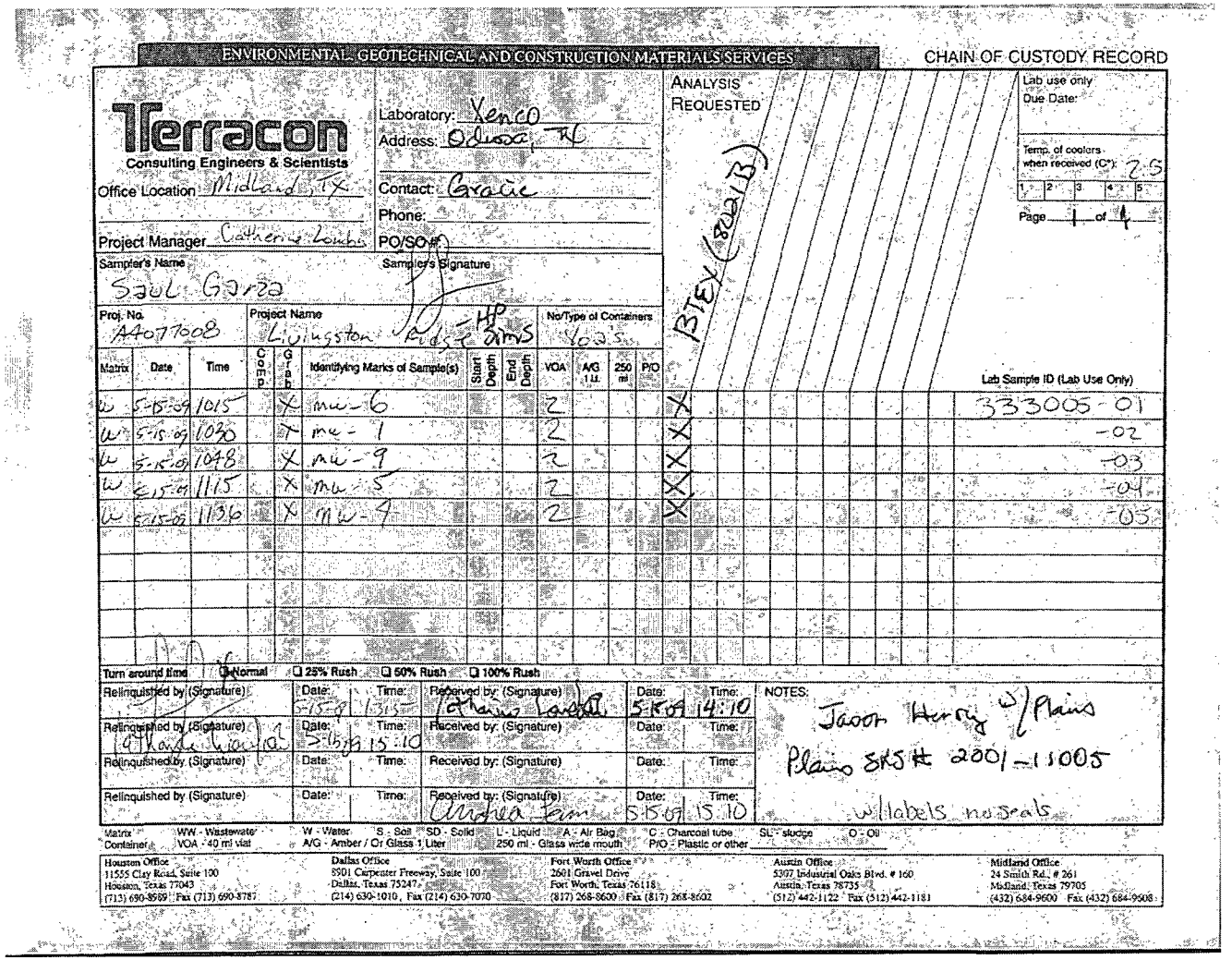
Reporting Units: mg/L

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0121	0.1000	0.1100	98	0.1000	0.1022	90	7	70-125	25	
Toluene	ND	0.1000	0.0934	93	0.1000	0.0869	87	7	70-125	25	
Ethylbenzene	0.0044	0.1000	0.0996	95	0.1000	0.0933	89	7	71-129	25	
m,p-Xylenes	0.0050	0.2000	0.2033	99	0.2000	0.1908	93	6	70-131	25	
o-Xylene	ND	0.1000	0.0990	99	0.1000	0.0922	92	7	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

Terracon
Consulting Engineers & Scientists

Office Location: Midland, TX
Project Manager: Catherine Lovell

Laboratory: XenCO
Address: Odessa, TX
Contact: Gracie
Phone:
PO/SO#:

Sampler's Name: Saul Garza
Sampler's Signature:

Proj. No.: A4077008
Project Name: Livingston - HP Rose Arms
No/Type of Containers: 40 VOAs

ANALYSIS REQUESTED: BTEX (8021B)

Lab use only
Due Date:
Temp. of coolers when received (C°): 2.5
1 2 3 4 5
Page 1 of 1

Matrix	Date	Time	Composite	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lit.	250 ml	P/O	Lab Sample ID (Lab Use Only)
W	5-15-09	1015		X	mw-6			2				333005-01
W	5-15-09	1030		X	mw-1			2				-02
W	5-15-09	1048		X	mw-9			2				-03
W	5-15-09	1115		X	mw-5			2				-04
W	5-15-09	1136		X	mw-7			2				-05

Turn around time: Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date	Time	Received by: (Signature)	Date	Time
	5-15-09	1315	Catherine Lovell	5-15-09	14:10
Relinquished by (Signature)	5-15-09	15:10	Received by: (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by: (Signature)	Date	Time
			Amber Tam	5-15-09	15:10

NOTES: Jason Henry w/ Plains
Plains SRS # 2001-11005
w/labels no seals

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Cr Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

Houston Office: 11555 Clay Road, Suite 100, Houston, Texas 77043, (713) 690-8569 Fax (713) 690-8787
Dallas Office: 8901 Carpenter Freeway, Suite 100, Dallas, Texas 75247, (214) 630-1010, Fax (214) 630-7070
Fort Worth Office: 2601 Gravel Drive, Fort Worth, Texas 76118, (817) 268-8600 Fax (817) 268-8602
Austin Office: 5307 Industrial Oaks Blvd. # 160, Austin, Texas 78735, (512) 442-1122 Fax (512) 442-1181
Midland Office: 24 Smith Rd., # 261, Midland, Texas 79705, (432) 684-9600 Fax (432) 684-9608

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Terracon - Plains

Date/ Time: 5.15.09 15:10

Lab ID #: 333005

Initials: GL

Sample Receipt Checklist

				Client Initials
#1 Temperature of container/ cooler?	(Yes)	No	7.5 °C	
#2 Shipping container in good condition?	(Yes)	No		
#3 Custody Seals intact on shipping container/ cooler?	Yes	No	(Not Present)	
#4 Custody Seals intact on sample bottles/ container?	Yes	No	(Not Present)	
#5 Chain of Custody present?	(Yes)	No		
#6 Sample instructions complete of Chain of Custody?	(Yes)	No		
#7 Chain of Custody signed when relinquished/ received?	(Yes)	No		
#8 Chain of Custody agrees with sample label(s)?	(Yes)	No	ID written on Cont./ Lid	
#9 Container label(s) legible and intact?	(Yes)	No	Not Applicable	
#10 Sample matrix/ properties agree with Chain of Custody?	(Yes)	No		
#11 Containers supplied by ELOT?	(Yes)	No		
#12 Samples in proper container/ bottle?	(Yes)	No	See Below	
#13 Samples properly preserved?	(Yes)	No	See Below	
#14 Sample bottles intact?	(Yes)	No		
#15 Preservations documented on Chain of Custody?	(Yes)	No		
#16 Containers documented on Chain of Custody?	(Yes)	No		
#17 Sufficient sample amount for indicated test(s)?	(Yes)	No	See Below	
#18 All samples received within sufficient hold time?	(Yes)	No	See Below	
#19 Subcontract of sample(s)?	Yes	No	(Not Applicable)	
#20 VOC samples have zero headspace?	(Yes)	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

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

Analytical Report 333007

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Livingston Ridge-HP Sims

2001-11005

22-MAY-09

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Miramar, FL E86349
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

22-MAY-09

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **333007**
Livingston Ridge-HP Sims
Project Address:

Jason Henry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 333007. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 333007 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 333007

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge-HP Sims

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-10	W	May-14-09 12:02		333007-001
MW-11	W	May-14-09 12:17		333007-002
MW-13	W	May-14-09 12:33		333007-003
MW-12	W	May-14-09 12:45		333007-004
MW-14	W	May-14-09 13:03		333007-005
MW-15	W	May-14-09 12:59		333007-006

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Livingston Ridge-HP Sims

Project ID:	*2001-11005*	*Report Date:*	*22-MAY-09*
Work Order Number:	***333007***	*Date Received:*	*05/15/2009*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: *LBA-759724 BTEX-MTBE EPA 8021B*
SW8021BM

Batch 759724, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis
Samples affected are: 333007-004.
4-Bromofluorobenzene recovered below QC limits. Data not confirmed by re-analysis. Samples affected are: 530448-1-BLK,333007-005,333007-006,333007-003,333007-002,333007-004.
Samples had matrix interference present.

Certificate of Analysis Summary 333007

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge-HP Sims

Project Id: 2001-11005
Contact: Jason Henry
Project Location:

Date Received in Lab: Fri May-15-09 03:10 pm
Report Date: 22-MAY-09
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	333007-001		333007-002		333007-003		333007-004		333007-005		333007-006	
	Field Id:	MW-10		MW-11		MW-13		MW-12		MW-14		MW-15	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	May-14-09 12:02		May-14-09 12:17		May-14-09 12:33		May-14-09 12:45		May-14-09 13:03		May-14-09 12:59	
BTEX by EPA 8021B	*Extracted:*	May-21-09 15:30		May-21-09 15:30		May-21-09 15:30		May-21-09 15:30		May-21-09 15:30		May-21-09 15:30	
	Analyzed:	May-21-09 22:13		May-21-09 23:17		May-21-09 23:38		May-22-09 00:00		May-22-09 00:21		May-22-09 00:43	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
m,p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total Xylenes		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total BTEX		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010

Brent Barron
Odessa Laboratory Director

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

* Outside XENCO's scope of NELAC Accreditation.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge-HP Sims

Work Orders : 333007, **Project ID:** 2001-11005

Lab Batch #: 759724 **Sample:** 530448-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/21/09 16:44

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 759724 **Sample:** 530448-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/21/09 17:05

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 759724 **Sample:** 530448-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/21/09 17:56

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0184	0.0300	61	80-120	**

Lab Batch #: 759724 **Sample:** 333007-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/21/09 22:13

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0256	0.0300	85	80-120	

Lab Batch #: 759724 **Sample:** 333007-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/21/09 23:17

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0196	0.0300	65	80-120	**

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge-HP Sims

Work Orders : 333007,

Project ID: 2001-11005

Lab Batch #: 759724 **Sample:** 333007-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/21/09 23:38

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0248	0.0300	83	80-120	
4-Bromofluorobenzene	0.0211	0.0300	70	80-120	**

Lab Batch #: 759724 **Sample:** 333007-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 00:00

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0211	0.0300	70	80-120	**
4-Bromofluorobenzene	0.0200	0.0300	67	80-120	**

Lab Batch #: 759724 **Sample:** 333007-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 00:21

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0212	0.0300	71	80-120	**

Lab Batch #: 759724 **Sample:** 333007-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 00:43

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0236	0.0300	79	80-120	**

Lab Batch #: 759724 **Sample:** 333009-003 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 02:51

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge-HP Sims

Work Orders : 333007,

Project ID: 2001-11005

Lab Batch #: 759724 **Sample:** 333009-003 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/22/09 03:12

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Livingston Ridge-HP Sims

Work Order #: 333007
Analyst: ASA
Lab Batch ID: 759724
Sample: 530448-1-BKS
Batch #: 1
Units: mg/L

Date Prepared: 05/21/2009
Project ID: 2001-11005
Date Analyzed: 05/21/2009
Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1091	109	0.1	0.1092	109	0	70-125	25	
Toluene	ND	0.1000	0.1112	111	0.1	0.1118	112	1	70-125	25	
Ethylbenzene	ND	0.1000	0.1120	112	0.1	0.1121	112	0	71-129	25	
m,p-Xylenes	ND	0.2000	0.2374	119	0.2	0.2377	119	0	70-131	25	
o-Xylene	ND	0.1000	0.1180	118	0.1	0.1184	118	0	71-133	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: Livingston Ridge-HP Sims

Work Order # : 333007 **Project ID:** 2001-11005

Lab Batch ID: 759724 **QC- Sample ID:** 333009-003 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 05/22/2009 **Date Prepared:** 05/21/2009 **Analyst:** ASA

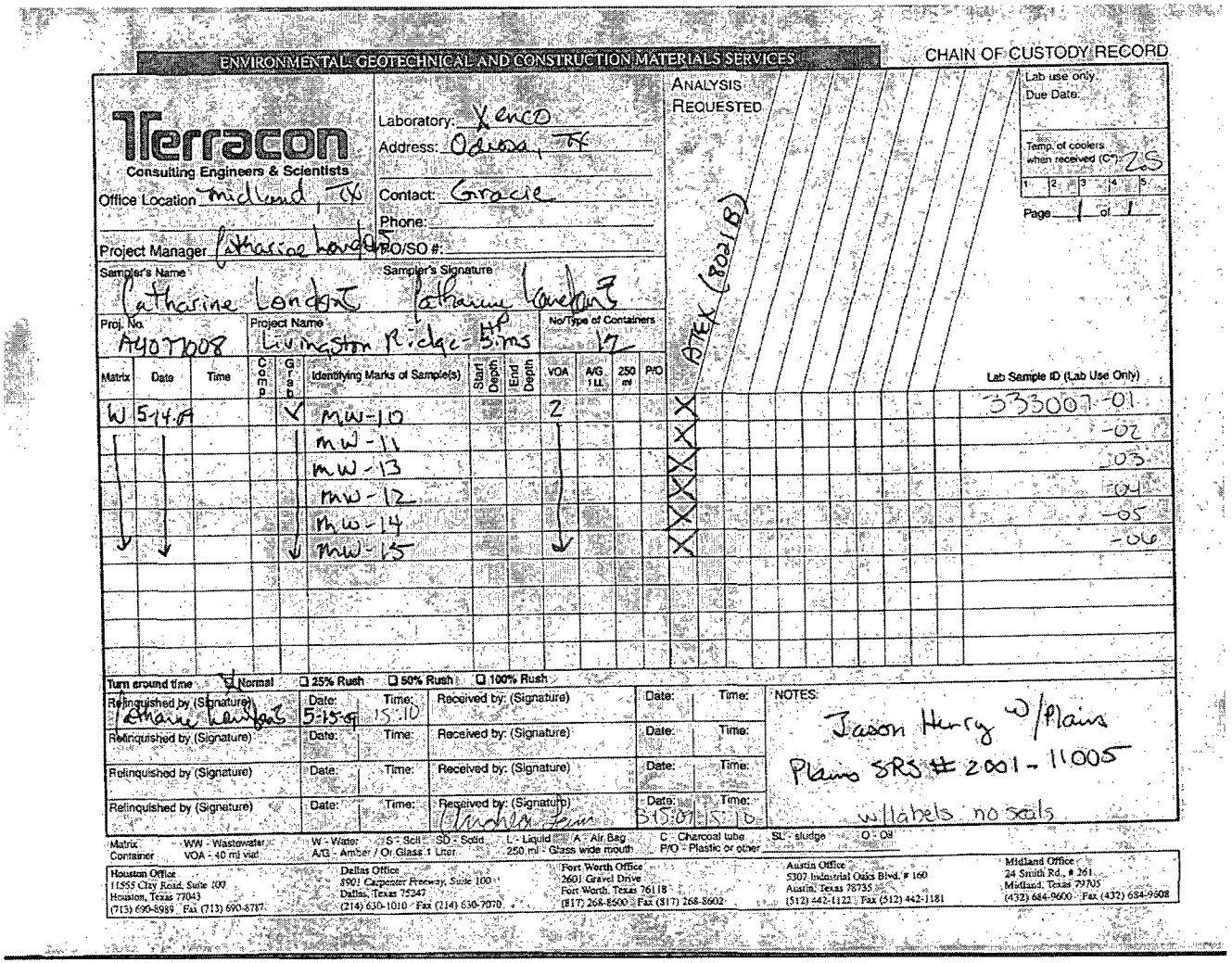
Reporting Units: mg/L

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0121	0.1000	0.1100	98	0.1000	0.1022	90	7	70-125	25	
Toluene	ND	0.1000	0.0934	93	0.1000	0.0869	87	7	70-125	25	
Ethylbenzene	0.0044	0.1000	0.0996	95	0.1000	0.0933	89	7	71-129	25	
m,p-Xylenes	0.0050	0.2000	0.2033	99	0.2000	0.1908	93	6	70-131	25	
o-Xylene	ND	0.1000	0.0990	99	0.1000	0.0922	92	7	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

Terracon
Consulting Engineers & Scientists

Office Location: Midland, TX

Project Manager: Catharine Landgraf

Laboratory: Xenco
Address: Odessa, TX
Contact: Gracie
Phone:
PO/SO #:

Sampler's Name: Catharine Landgraf
Sampler's Signature: Catharine Landgraf

Proj. No.: A4077008
Project Name: Livingston Ridge - SWMS
No/Type of Containers: 17

Lab use only
Due Date:
Temp. of coolers when received (C°): 2.5
Page 1 of 1

ANALYSIS REQUESTED: BTEX (8021B)

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 L	250 ml	P/O	Lab Sample ID (Lab Use Only)
W	5-14-19			✓	MW-10			2				333007-01
					MW-11							-02
					MW-13							-03
					MW-12							-04
					MW-14							-05
				↓	MW-15			↓				-06

Turn around time: ☑ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

	Date:	Time:		Date:	Time:
Relinquished by (Signature): Catharine Landgraf	5-15-19	15:10	Received by: (Signature)		
Relinquished by (Signature)			Received by: (Signature)		
Relinquished by (Signature)			Received by: (Signature)		
Relinquished by (Signature)			Received by: (Signature)	5-15-19	15:10

NOTES:
Jason Henry w/Plains
Plains SRS # 2001-11005
w/labels no seals

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

Houston Office: 11555 Clay Road, Suite 100, Houston, Texas 77043, (713) 690-8989, Fax (713) 690-8787
Dallas Office: 8901 Carpenter Freeway, Suite 100, Dallas, Texas 75247, (214) 630-1010, Fax (214) 630-7070
Fort Worth Office: 2601 Gravel Drive, Fort Worth, Texas 76118, (817) 268-8500, Fax (817) 268-8502
Austin Office: 5307 Industrial Oaks Blvd. # 160, Austin, Texas 78735, (512) 442-1122, Fax (512) 442-1181
Midland Office: 24 Smith Rd., # 261, Midland, Texas 79705, (432) 684-9600, Fax (432) 684-9608

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Terracon / Plains

Date/ Time: 5.15.09 15:10

Lab ID #: 333007

Initials: AL

Sample Receipt Checklist

				Client Initials
#1 Temperature of container/ cooler?	(Yes)	No	2.5 °C	
#2 Shipping container in good condition?	(Yes)	No		
#3 Custody Seals intact on shipping container/ cooler?	Yes	No	(Not Present)	
#4 Custody Seals intact on sample bottles/ container?	Yes	No	(Not Present)	
#5 Chain of Custody present?	(Yes)	No		
#6 Sample instructions complete of Chain of Custody?	(Yes)	No		
#7 Chain of Custody signed when relinquished/ received?	(Yes)	No		
#8 Chain of Custody agrees with sample label(s)?	(Yes)	No	ID written on Cont./ Lid	
#9 Container label(s) legible and intact?	(Yes)	No	Not Applicable	
#10 Sample matrix/ properties agree with Chain of Custody?	(Yes)	No		
#11 Containers supplied by ELOT?	(Yes)	No		
#12 Samples in proper container/ bottle?	(Yes)	No	See Below	
#13 Samples properly preserved?	(Yes)	No	See Below	
#14 Sample bottles intact?	(Yes)	No		
#15 Preservations documented on Chain of Custody?	(Yes)	No		
#16 Containers documented on Chain of Custody?	(Yes)	No		
#17 Sufficient sample amount for indicated test(s)?	(Yes)	No	See Below	
#18 All samples received within sufficient hold time?	(Yes)	No	See Below	
#19 Subcontract of sample(s)?	Yes	No	(Not Applicable)	
#20 VOC samples have zero headspace?	(Yes)	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

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

Analytical Report 340922

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Livingston Ridge

2001-11005

19-AUG-09

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-08-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00308), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87428), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Miramar (EPA Lab code: FL01246): Florida (E86349)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-08-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-08-TX)

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370-08-TX)

Houston - Dallas - San Antonio - Tampa - Miami - Midland - Corpus Christi - Atlanta - Latin America

19-AUG-09

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **340922**
Livingston Ridge
Project Address:

Jason Henry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 340922. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 340922 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 340922

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-14	W	Aug-12-09 14:45		340922-001
MW-15	W	Aug-12-09 14:31		340922-002
MW-11	W	Aug-12-09 15:00		340922-003
MW-13	W	Aug-12-09 15:28		340922-004
MW-12	W	Aug-12-09 15:35		340922-005
MW-5	W	Aug-12-09 16:00		340922-006
MW-4	W	Aug-12-09 16:13		340922-007
MW-10	W	Aug-12-09 16:30		340922-008
MW-1	W	Aug-13-09 11:15		340922-009
MW-6	W	Aug-13-09 13:00		340922-010
MW-9	W	Aug-13-09 13:19		340922-011

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Livingston Ridge

Project ID:	*2001-11005*	*Report Date:*	*19-AUG-09*
Work Order Number:	*340922*	*Date Received:*	*08/13/2009*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-768698 BTEX-MTBE EPA 8021B
SW8021BM

Batch 768698, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 535464-1-BLK,340922-008,340922-009,340922-002,340922-001,340922-003.
4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis
Samples affected are: 340922-001 S.

Batch: LBA-768705 BTEX-MTBE EPA 8021B
SW8021BM

Batch 768705, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 535466-1-BLK,340922-011,340922-010.

Batch: LBA-768869 BTEX-MTBE EPA 8021B
SW8021BM

Batch 768869, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis
Samples affected are: 340922-004,340922-005.
4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 535561-1-BLK.
4-Bromofluorobenzene recovered above QC limits Data not confirmed by re-analysis. Samples affected are: 535561-1-BSD

Certificate of Analysis Summary 340922

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Jason Henry
Project Location:

Date Received in Lab: Thu Aug-13-09 04:20 pm
Report Date: 19-AUG-09
Project Manager: Brent Barron, II

Analysis Requested	*Lab Id:*	340922-001		340922-002		340922-003		340922-004		340922-005		340922-006	
	Field Id:	MW-14		MW-15		MW-11		MW-13		MW-12		MW-5	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Aug-12-09 14:45		Aug-12-09 14:31		Aug-12-09 15:00		Aug-12-09 15:28		Aug-12-09 15:35		Aug-12-09 16:00	
BTEX by EPA 8021B	*Extracted:*	Aug-14-09 12:15		Aug-14-09 12:15		Aug-14-09 12:15		Aug-17-09 15:45		Aug-17-09 15:45		Aug-14-09 12:15	
	Analyzed:	Aug-14-09 19:50		Aug-14-09 20:09		Aug-14-09 20:27		Aug-17-09 17:51		Aug-17-09 18:09		Aug-15-09 01:58	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	0.2247	0.0050
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0100
Ethylbenzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	0.2958	0.0050
m,p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	0.1891	0.0100
o-Xylene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	0.1264	0.0050
Total Xylenes		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	0.3155	0.0050
Total BTEX		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	0.8360	0.0050

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 340922

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Jason Henry
Project Location:

Date Received in Lab: Thu Aug-13-09 04:20 pm
Report Date: 19-AUG-09
Project Manager: Brent Barron, II

Analysis Requested											
	Lab Id:	340922-007		340922-008		340922-009		340922-010		340922-011	
	Field Id:	MW-4		MW-10		MW-1		MW-6		MW-9	
	Depth:										
	Matrix:	WATER		WATER		WATER		WATER		WATER	
	Sampled:	Aug-12-09 16:13		Aug-12-09 16:30		Aug-13-09 11:15		Aug-13-09 13:00		Aug-13-09 13:19	
BTEX by EPA 8021B	***Extracted:***	Aug-14-09 12:15		Aug-14-09 12:15		Aug-14-09 12:15		Aug-14-09 13:00		Aug-14-09 13:00	
	Analyzed:	Aug-14-09 21:22		Aug-14-09 21:41		Aug-15-09 02:17		Aug-15-09 12:35		Aug-15-09 13:31	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		0.0322	0.0010	ND	0.0010	0.2665	0.0100	ND	0.0010	ND	0.0010
Toluene		ND	0.0020	ND	0.0020	ND	0.0200	ND	0.0020	ND	0.0020
Ethylbenzene		0.0350	0.0010	ND	0.0010	0.0628	0.0100	ND	0.0010	ND	0.0010
m,p-Xylenes		0.0024	0.0020	ND	0.0020	0.0341	0.0200	ND	0.0020	ND	0.0020
o-Xylene		0.0025	0.0010	ND	0.0010	ND	0.0100	ND	0.0010	ND	0.0010
Total Xylenes		0.0049	0.0010	ND	0.0010	0.0341	0.0100	ND	0.0010	ND	0.0010
Total BTEX		0.0721	0.0010	ND	0.0010	0.3634	0.0100	ND	0.0010	ND	0.0010

Brent Barron, II
Odessa Laboratory Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

* Outside XENCO's scope of NELAC Accreditation.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 340922,

Project ID: 2001-11005

Lab Batch #: 768698 **Sample:** 535464-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/14/09 18:36

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0354	0.0300	118	80-120	

Lab Batch #: 768698 **Sample:** 535464-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/14/09 18:55

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0350	0.0300	117	80-120	

Lab Batch #: 768698 **Sample:** 535464-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/14/09 19:32

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0168	0.0300	56	80-120	*

Lab Batch #: 768698 **Sample:** 340922-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/14/09 19:50

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0225	0.0300	75	80-120	*

Lab Batch #: 768698 **Sample:** 340922-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/14/09 20:09

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0176	0.0300	59	80-120	*

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 340922,

Project ID: 2001-11005

Lab Batch #: 768698 **Sample:** 340922-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/14/09 20:27

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0248	0.0300	83	80-120	
4-Bromofluorobenzene	0.0190	0.0300	63	80-120	*

Lab Batch #: 768698 **Sample:** 340922-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/14/09 21:22

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0247	0.0300	82	80-120	

Lab Batch #: 768698 **Sample:** 340922-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/14/09 21:41

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0185	0.0300	62	80-120	*

Lab Batch #: 768698 **Sample:** 340922-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 01:58

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0259	0.0300	86	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Lab Batch #: 768698 **Sample:** 340922-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 02:17

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0259	0.0300	86	80-120	
4-Bromofluorobenzene	0.0228	0.0300	76	80-120	*

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 340922,

Project ID: 2001-11005

Lab Batch #: 768698 **Sample:** 340922-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 02:35

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0362	0.0300	121	80-120	*

Lab Batch #: 768698 **Sample:** 340922-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 02:54

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0351	0.0300	117	80-120	

Lab Batch #: 768705 **Sample:** 535466-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 03:31

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

Lab Batch #: 768705 **Sample:** 535466-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 03:49

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

Lab Batch #: 768705 **Sample:** 535466-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 04:25

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0147	0.0300	49	80-120	*

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 340922,

Project ID: 2001-11005

Lab Batch #: 768705 **Sample:** 340922-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 12:35

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0132	0.0300	44	80-120	*

Lab Batch #: 768705 **Sample:** 340922-011 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 13:31

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0157	0.0300	52	80-120	*

Lab Batch #: 768705 **Sample:** 340923-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 14:46

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0356	0.0300	119	80-120	

Lab Batch #: 768705 **Sample:** 340923-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/15/09 15:04

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0355	0.0300	118	80-120	

Lab Batch #: 768869 **Sample:** 535561-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/17/09 16:18

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0360	0.0300	120	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 340922, **Project ID:** 2001-11005

Lab Batch #: 768869 **Sample:** 535561-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/17/09 16:37

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0364	0.0300	121	80-120	*

Lab Batch #: 768869 **Sample:** 535561-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/17/09 17:14

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0218	0.0300	73	80-120	*

Lab Batch #: 768869 **Sample:** 340922-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/17/09 17:51

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0230	0.0300	77	80-120	**
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 768869 **Sample:** 340922-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/17/09 18:09

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0227	0.0300	76	80-120	**
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

Lab Batch #: 768869 **Sample:** 341190-007 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/18/09 00:37

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0348	0.0300	116	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 340922,

Project ID: 2001-11005

Lab Batch #: 768869 **Sample:** 341190-007 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/18/09 00:56

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0358	0.0300	119	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Livingston Ridge

Work Order #: 340922 **Project ID:** 2001-11005

Analyst: ASA **Date Prepared:** 08/14/2009 **Date Analyzed:** 08/14/2009

Lab Batch ID: 768698 **Sample:** 535464-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1020	102	0.1	0.1092	109	7	70-125	25	
Toluene	ND	0.1000	0.0979	98	0.1	0.1052	105	7	70-125	25	
Ethylbenzene	ND	0.1000	0.1096	110	0.1	0.1183	118	8	71-129	25	
m,p-Xylenes	ND	0.2000	0.2266	113	0.2	0.2433	122	7	70-131	25	
o-Xylene	ND	0.1000	0.1070	107	0.1	0.1142	114	7	71-133	25	

Analyst: ASA **Date Prepared:** 08/14/2009 **Date Analyzed:** 08/15/2009

Lab Batch ID: 768705 **Sample:** 535466-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1053	105	0.1	0.1037	104	2	70-125	25	
Toluene	ND	0.1000	0.1009	101	0.1	0.0993	99	2	70-125	25	
Ethylbenzene	ND	0.1000	0.1119	112	0.1	0.1107	111	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.2289	114	0.2	0.2233	112	2	70-131	25	
o-Xylene	ND	0.1000	0.1083	108	0.1	0.1072	107	1	71-133	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: Livingston Ridge

Work Order #: 340922 **Project ID:** 2001-11005

Analyst: ASA **Date Prepared:** 08/17/2009 **Date Analyzed:** 08/17/2009

Lab Batch ID: 768869 **Sample:** 535561-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1039	104	0.1	0.1040	104	0	70-125	25	
Toluene	ND	0.1000	0.0997	100	0.1	0.1004	100	1	70-125	25	
Ethylbenzene	ND	0.1000	0.1116	112	0.1	0.1138	114	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.2259	113	0.2	0.2332	117	3	70-131	25	
o-Xylene	ND	0.1000	0.1087	109	0.1	0.1113	111	2	71-133	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: Livingston Ridge

Work Order # : 340922 **Project ID:** 2001-11005

Lab Batch ID: 768698 **QC- Sample ID:** 340922-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 08/15/2009 **Date Prepared:** 08/14/2009 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0978	98	0.1000	0.1042	104	6	70-125	25	
Toluene	ND	0.1000	0.0927	93	0.1000	0.0991	99	7	70-125	25	
Ethylbenzene	ND	0.1000	0.1047	105	0.1000	0.1114	111	6	71-129	25	
m,p-Xylenes	ND	0.2000	0.2157	108	0.2000	0.2295	115	6	70-131	25	
o-Xylene	ND	0.1000	0.1003	100	0.1000	0.1066	107	6	71-133	25	

Lab Batch ID: 768705 **QC- Sample ID:** 340923-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 08/15/2009 **Date Prepared:** 08/14/2009 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0965	97	0.1000	0.0977	98	1	70-125	25	
Toluene	ND	0.1000	0.0930	93	0.1000	0.0943	94	1	70-125	25	
Ethylbenzene	ND	0.1000	0.1047	105	0.1000	0.1063	106	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.2147	107	0.2000	0.2159	108	1	70-131	25	
o-Xylene	ND	0.1000	0.1014	101	0.1000	0.1022	102	1	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Form 3 - MS / MSD Recoveries

Project Name: Livingston Ridge

Work Order # : 340922 **Project ID:** 2001-11005

Lab Batch ID: 768869 **QC- Sample ID:** 341190-007 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 08/18/2009 **Date Prepared:** 08/17/2009 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1005	101	0.1000	0.1028	103	2	70-125	25	
Toluene	ND	0.1000	0.0957	96	0.1000	0.0979	98	2	70-125	25	
Ethylbenzene	ND	0.1000	0.1064	106	0.1000	0.1094	109	3	71-129	25	
m,p-Xylenes	ND	0.2000	0.2188	109	0.2000	0.2258	113	3	70-131	25	
o-Xylene	ND	0.1000	0.1022	102	0.1000	0.1069	107	4	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

Terracon
Consulting Engineers & Scientists

Office Location: Midland
Project Manager: Catherine Landon

Laboratory: Xenco
Address: 12600 West I-20 East, Odessa, Texas 79765
Contact: Gracie
Phone:
PO/SO #:

ANALYSIS REQUESTED: BTEX (8021B)

Lab use only
Due Date:
Temp. of coolers when received (C°): 2.1
1 | 2 | 3 | 4 | 5
Page 1 of 2

Sampler's Name: Sean Hightower
Sampler's Signature: [signature]

Proj. No.: A4077008
Project Name: Livingston Ridge

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	BTEX (8021B)	Lab Sample ID (Lab Use Only)
W	8/12/09	1445		✓	MW-14			✓				✓	340922-001
W	8/12/09	1431		✓	MW-15			✓				✓	-002
W	8/12/09	1500		✓	MW-11			✓				✓	-003
W	8/12/09	1528		✓	MW-13			✓				✓	-004
W	8/12/09	1535		✓	MW-12			✓				✓	-005
W	8/12/09	1600		✓	MW-5			✓				✓	-006
W	8/12/09	1613		✓	MW-4			✓				✓	-007
W	8/12/09	1630		✓	MW-10			✓				✓	-008
W	8/13/09	11:15		✓	MW-1			✓				✓	-009
W	8/13/09	13:00		✓	MW-6			✓				✓	-010

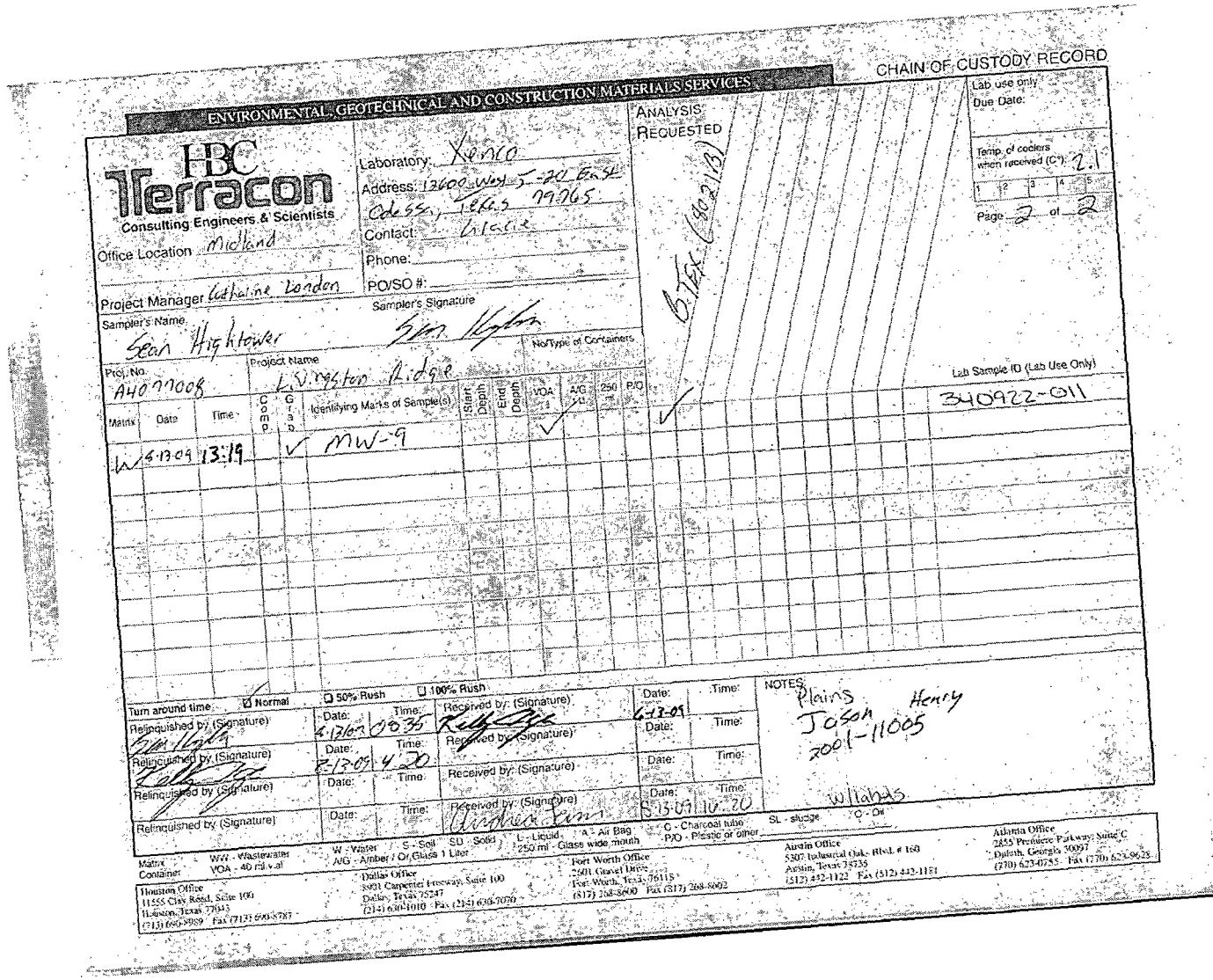
Turn around time: ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
[signature]	8-13-09	0835	[signature]	8-13-09	08:55
[signature]	8-13-09	4:20			
			[signature]	8-13-09	16:20

NOTES: Plains
Jason Henry
2001-11005
w/ labels

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

Houston Office: 11555 Clay Road, Suite 100, Houston, Texas 77043, (713) 690-8989 Fax (713) 690-8787
Dallas Office: 8901 Carpenter Freeway, Suite 100, Dallas, Texas 75247, (214) 630-1010 Fax (214) 630-7070
Fort Worth Office: 2601 Gravel Drive, Fort Worth, Texas 76118, (817) 268-8600 Fax (817) 268-8602
Austin Office: 5307 Industrial Oaks Blvd. # 160, Austin, Texas 78735, (512) 442-1122 Fax (512) 442-1181
Midland Office: 24 Smith Rd. # 261, Midland, Texas 79705, (432) 684-9600 Fax (432) 684-9608



ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

HBC Terracon
Consulting Engineers & Scientists

Office Location: Midland
Project Manager: Catherine London
Sampler's Name: Sean Hightower
Sampler's Signature: Sean Hightower

Laboratory: Xenco
Address: 12600 West I-20 East, Odessa, Texas 79765
Contact: Grace
Phone:
PO/SO #:

Proj. No.: A40477008
Project Name: Livingston Ridge
No/Type of Containers

ANALYSIS REQUESTED: BTEX (8021B)

Lab use only
Due Date:
Temp. of coolers when received (C°): 2.1
Page 2 of 2

Matrix	Date	Time	Comp.	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G	250	P/O	Lab Sample ID (Lab Use Only)
W	6-13-09	13:19		✓	MW-9			✓				340922-011

Turn around time: ☑ Normal ☐ 50% Rush ☐ 100% Rush

	Date	Time		Date	Time
Relinquished by: (Signature)	6-13-09	10:35	Received by: (Signature)	6-13-09	
Relinquished by: (Signature)	6-13-09	4:20	Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)	6-15-09	10:20

NOTES: Plains Henry Jason 2001-11005 Williams

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

Houston Office: 11555 Clay Road, Suite 100, Houston, Texas 77043, (713) 690-8989, Fax (713) 690-8787
Dallas Office: 8901 Carpenter Freeway, Suite 100, Dallas, Texas 75247, (214) 630-1010, Fax (214) 630-7070
Fort Worth Office: 2501 Grove Drive, Fort Worth, Texas 76115, (817) 268-8600, Fax (817) 268-8602
Austin Office: 5307 Industrial Oak, Rhd. # 160, Austin, Texas 78735, (512) 432-1123, Fax (512) 432-1181
Atlanta Office: 2255 Premiere Parkway, Suite C, Duluth, Georgia 30097, (770) 623-0755, Fax (770) 623-9628

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Terracon | Plains

Date/ Time: 8/3/09 16:20

Lab ID # : 340922

Initials: GL

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	(Yes)	No	2.1 °C	
#2	Shipping container in good condition?	(Yes)	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	(Not Present)	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	(Not Present)	
#5	Chain of Custody present?	(Yes)	No		
#6	Sample instructions complete of Chain of Custody?	(Yes)	No		
#7	Chain of Custody signed when relinquished/ received?	(Yes)	No		
#8	Chain of Custody agrees with sample label(s)?	(Yes)	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	(Yes)	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	(Yes)	No		
#11	Containers supplied by ELOT?	(Yes)	No		
#12	Samples in proper container/ bottle?	(Yes)	No	See Below	
#13	Samples properly preserved?	(Yes)	No	See Below	
#14	Sample bottles intact?	(Yes)	No		
#15	Preservations documented on Chain of Custody?	(Yes)	No		
#16	Containers documented on Chain of Custody?	(Yes)	No		
#17	Sufficient sample amount for indicated test(s)?	(Yes)	No	See Below	
#18	All samples received within sufficient hold time?	(Yes)	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	(Not Applicable)	
#20	VOC samples have zero headspace?	(Yes)	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

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

Analytical Report 351955

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Livingston Ridge

2001-11005

17-NOV-09

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-08-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00308), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87428), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-08-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-08-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370-08-TX)
Xenco-Boca Raton (EPA Lab Code: FL00449): Florida(E86240),
South Carolina(96031001), Louisiana(04154), Georgia(917)

17-NOV-09

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **351955**
Livingston Ridge
Project Address:

Jason Henry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 351955. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 351955 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 351955

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-4	W	Nov-11-09 12:45		351955-001
MW-6	W	Nov-11-09 11:55		351955-002
MW-9	W	Nov-11-09 12:20		351955-003
MW-10	W	Nov-11-09 11:30		351955-004
MW-11	W	Nov-11-09 10:40		351955-005
MW-12	W	Nov-11-09 10:20		351955-006
MW-13	W	Nov-11-09 10:30		351955-007
MW-14	W	Nov-11-09 10:50		351955-008
MW-15	W	Nov-11-09 11:00		351955-009

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Livingston Ridge

Project ID:	*2001-11005*	*Report Date:*	*17-NOV-09*
Work Order Number:	*351955*	*Date Received:*	*11/12/2009*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-781922 BTEX by EPA 8021
SW8021BM

Batch 781922, Ethylbenzene recovered below QC limits in the Matrix Spike.
Samples affected are: 351955-002, -004, -009, -001, -006, -003, -007, -008, -005.
The Laboratory Control Sample for Ethylbenzene is within laboratory Control Limits

Certificate of Analysis Summary 351955

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Jason Henry
Project Location:

Date Received in Lab: Thu Nov-12-09 11:00 am
Report Date: 17-NOV-09
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	351955-001		351955-002		351955-003		351955-004		351955-005		351955-006	
	Field Id:	MW-4		MW-6		MW-9		MW-10		MW-11		MW-12	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Nov-11-09 12:45		Nov-11-09 11:55		Nov-11-09 12:20		Nov-11-09 11:30		Nov-11-09 10:40		Nov-11-09 10:20	
BTEX by EPA 8021	*Extracted:*	Nov-14-09 10:30		Nov-14-09 10:30		Nov-14-09 10:30		Nov-14-09 10:30		Nov-14-09 10:30		Nov-14-09 10:30	
	Analyzed:	Nov-15-09 22:05		Nov-15-09 22:26		Nov-15-09 22:47		Nov-15-09 23:08		Nov-15-09 23:30		Nov-15-09 23:51	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		0.0725	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		0.0414	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	0.0020	0.0010
m,p-Xylenes		0.0074	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	0.0071	0.0010
Xylenes, Total		0.0074	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	0.0071	0.0010
Total BTEX		0.1213	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	0.0091	0.0010

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 351955

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Jason Henry
Project Location:

Date Received in Lab: Thu Nov-12-09 11:00 am
Report Date: 17-NOV-09
Project Manager: Brent Barron, II

Analysis Requested												
	Lab Id:	351955-007		351955-008		351955-009						
	Field Id:	MW-13		MW-14		MW-15						
	Depth:											
	Matrix:	WATER		WATER		WATER						
	Sampled:	Nov-11-09 10:30		Nov-11-09 10:50		Nov-11-09 11:00						
BTEX by EPA 8021	*Extracted:*	Nov-14-09 10:30		Nov-14-09 10:30		Nov-14-09 10:30						
	Analyzed:	Nov-16-09 00:12		Nov-16-09 00:33		Nov-16-09 00:54						
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL					
Benzene		ND	0.0010	ND	0.0010	ND	0.0010					
Toluene		ND	0.0020	ND	0.0020	ND	0.0020					
Ethylbenzene		ND	0.0010	ND	0.0010	ND	0.0010					
m,p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020					
o-Xylene		ND	0.0010	ND	0.0010	ND	0.0010					
Xylenes, Total		ND	0.0010	ND	0.0010	ND	0.0010					
Total BTEX		ND	0.0010	ND	0.0010	ND	0.0010					

Brent Barron, II
Odessa Laboratory Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

* Outside XENCO's scope of NELAC Accreditation.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 351955,

Project ID: 2001-11005

Lab Batch #: 781922 **Sample:** 543292-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/09 20:40

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 781922 **Sample:** 543292-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/09 21:01

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 781922 **Sample:** 543292-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/09 21:44

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 781922 **Sample:** 351955-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/09 22:05

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 781922 **Sample:** 351955-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/09 22:26

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 351955,

Project ID: 2001-11005

Lab Batch #: 781922 **Sample:** 351955-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/09 22:47

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 781922 **Sample:** 351955-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/09 23:08

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 781922 **Sample:** 351955-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/09 23:30

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 781922 **Sample:** 351955-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/09 23:51

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0245	0.0300	82	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 781922 **Sample:** 351955-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/09 00:12

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 351955,

Project ID: 2001-11005

Lab Batch #: 781922 **Sample:** 351955-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/09 00:33

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 781922 **Sample:** 351955-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/09 00:54

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 781922 **Sample:** 351955-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/09 05:04

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 781922 **Sample:** 351955-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/09 05:25

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Livingston Ridge

Work Order #: 351955
Analyst: ASA
Lab Batch ID: 781922
Sample: 543292-1-BKS
Units: mg/L

Date Prepared: 11/14/2009
Batch #: 1

Project ID: 2001-11005
Date Analyzed: 11/15/2009
Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0854	85	0.1	0.0845	85	1	70-125	25	
Toluene	ND	0.1000	0.0853	85	0.1	0.0845	85	1	70-125	25	
Ethylbenzene	ND	0.1000	0.0835	84	0.1	0.0817	82	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.1805	90	0.2	0.1754	88	3	70-131	25	
o-Xylene	ND	0.1000	0.0893	89	0.1	0.0877	88	2	71-133	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: Livingston Ridge

Work Order # : 351955 **Project ID:** 2001-11005

Lab Batch ID: 781922 **QC- Sample ID:** 351955-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/16/2009 **Date Prepared:** 11/14/2009 **Analyst:** ASA

Reporting Units: mg/L

BTEX by EPA 8021 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0725	0.1000	0.1463	74	0.1000	0.1831	111	22	70-125	25	
Toluene	ND	0.1000	0.0708	71	0.1000	0.0891	89	23	70-125	25	
Ethylbenzene	0.0414	0.1000	0.1107	69	0.1000	0.1378	96	22	71-129	25	X
m,p-Xylenes	0.0074	0.2000	0.1516	72	0.2000	0.1889	91	22	70-131	25	
o-Xylene	ND	0.1000	0.0717	72	0.1000	0.0890	89	22	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

Terracon
Consulting Engineers & Scientists

Office Location: Midland, Tx

Project Manager: Catholine London

Laboratory: Xenco
Address: 12600 West I-20 East
Odessa, Texas 79765
Contact:
Phone:
PO/SO #:

Sampler's Name: Sean Hightower
Sampler's Signature:

Proj. No.: A40770086
Project Name: Livingston Ridge
No/Type of Containers: 18/VOA

ANALYSIS REQUESTED: BTEX (8021B)

Lab use only
Due Date:
Temp. of coolers when received (C°): .1
1 2 3 4 5
Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	Lab Sample ID (Lab Use Only)
W	11/11/09	1245		✓	MW-4			2				351955-01
W	11/11/09	1155		✓	MW-6			2				-02
W	11/11/09	1220		✓	MW-9			2				-03
W	11/11/09	1130		✓	MW-10			2				-04
W	11/11/09	1040		✓	MW-11			2				-05
W	11/11/09	1020		✓	MW-12			2				-06
W	11/11/09	1030		✓	MW-13			2				-07
W	11/11/09	1050		✓	MW-14			2				-08
W	11/11/09	1100		✓	MW-15			2				-09
												~~-10~~ MS

Turn around time: ☑ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	11/12/09	0830	Catherine Newton	11-12-09	08:31
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Catherine London	11-12-09	11:00	Andrea Fam	11-12-09	11:00
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES: Jason Henry 2001-11005

w/labels as seal

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

Houston Office: 11555 Clay Road, Suite 100, Houston, Texas 77043, (713) 690-8989 Fax (713) 690-8787
Dallas Office: 8901 Carpenter Freeway, Suite 100, Dallas, Texas 75247, (214) 630-1010 Fax (214) 630-7070
Fort Worth Office: 2601 Gravel Drive, Fort Worth, Texas 76118, (817) 268-8600 Fax (817) 268-8602
Austin Office: 5307 Industrial Oaks Blvd. # 160, Austin, Texas 78735, (512) 442-1122 Fax (512) 442-1181
Midland Office: 24 Smith Rd., # 261, Midland, Texas 79705, (432) 684-9600 Fax (432) 684-9608

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Terracon / Plains

Date/ Time: 11.12.09 11:00

Lab ID # : 351955

Initials: AL

Sample Receipt Checklist

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

Variance Documentation

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

Regarding: _____

Corrective Action Taken:

Check all that Apply:

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

APPENDIX D

Historical Gauging Data and a CD of 2009 Annual Groundwater Monitoring Report