1R - 398

Annual GW Mon. REPORTS

DATE:

2010

PLAINS
ALL AMERICAN

March 9, 2011

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

Re: Plains All American – 2010 Annual Monitoring Reports
2 Sites in Lea County, New Mexico

Dear Mr. Hansen:

Plains All American is an operator of crude oil pipelines and terminal facilities in the state of New Mexico. Plains All American actively monitors certain historical release sites exhibiting groundwater impacts, consistent with assessments and work plans developed in consultation with the New Mexico Oil Conservation Division (NMOCD). In accordance with the rules and regulations of the NMOCD, Plains All American hereby submits our Annual Monitoring reports for the following sites:

Livingston Line-Bob McCasland	1R-0395	Section 3, T21S, R37E, Lea County
Livingston Ridge to Hugh-P. Sims	1R-0398	Section 3, T21S, R37E, Lea County

Terracon prepared these documents and has vouched for their accuracy and completeness, and on behalf of Plains All American, I have personally reviewed the documents and interviewed Terracon personnel in order to verify the accuracy and completeness of these documents. It is based upon these inquiries and reviews that Plains All American submits the enclosed Annual Monitoring Reports for the above facilities.

If you have any questions or require further information, please contact me at (575) 441-1099.

Sincerely,

Jason Henry
Remediation Coordinator
Plains All American

CC: Geoff Leking, NMOCD, Hobbs, NM

Enclosures

2010 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

February 8, 2011

Prepared for:

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

Prepared by:

Terracon

Midland, Texas

Terracon

February 8, 2011

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: 2010 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 2010 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:

Joshua B. Woodall
Field Geologist

Reviewed by:

Barrett W. Bole, P. G.
Senior Associate

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Terracon

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Livingston Ridge to Hugh - P. Sims Site
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, 2008, and 2009 Annual Groundwater Monitoring Reports for submittal to the NMOCD. Four quarterly groundwater monitoring and sampling events were conducted during 2010 by Terracon. The events were performed on February 3, 2010, May 27, 2010, August 16, 2010 and November 10 and 11, 2010 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) every quarter.

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 3 & 5, 2010, May 27, 2010, August 16, 2010 and November 11, 2010 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 2010 in monitor wells MW-5 (from non-detect to 0.01 feet), and temporary monitor well TMW-1 (at thicknesses ranging from a 0.15 feet to 2.54 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 2010 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 2010. 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.

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 2010 and May 2010 sampling events was 0.003 ft/ft and toward the southeast;
- The gradient/direction during the August 2010 sampling event was 0.004 ft/ft and toward the southeast; and,
- The gradient/direction during the November 2010 sampling event was 0.002 ft/ft and toward the southeast.

Groundwater flow direction remained relatively consistent throughout 2010, to the southeast. Water level measurement data is summarized in Table 1 in Appendix B.

Groundwater elevations in 2010 increased an average of approximately 0.58 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 3 and 5, 2010. The first quarter results are summarized below:

- All fifteen monitoring wells were sampled for BTEX constituents in February 2010;
- Groundwater samples were not collected from temporary monitoring well TMW-1 due to the presence of PSH in February 2010;
- 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, MW-6, MW-7, MW-8, MW-9 and MW-10 through MW-15;
- Benzene was detected in the groundwater samples collected from monitor wells MW-1 (at 0.6889 mg/l), MW-4 (at 0.0198 mg/l), and MW-5 (at 0.7078 mg/l), which exceeded the NMWQCC groundwater standard of 0.01 mg/l for benzene; and,
- Toluene, ethylbenzene and total xylenes were not detected in the groundwater samples collected in February 2010 exceeding their respective laboratory reporting limits and/or NMWQCC groundwater standard.

2nd Quarter

Groundwater samples were collected during the second quarter on May 27, 2010. The second quarter results are summarized below.

- Four monitor wells were not sampled for BTEX constituents in May 2010 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 MW-1, MW-5 and TMW-1 due to the presence of PSH in May 2010;
- The groundwater samples collected from monitor wells MW-6, 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 one of the groundwater samples collected. Monitor well MW-4 had a concentration of 0.0787 mg/l, which exceeded their laboratory reporting limit and/or NMWQCC groundwater standard; and,

- Toluene, ethylbenzene and total xylenes were not detected in the groundwater samples collected in May 2010 exceeding their respective laboratory reporting limits and/or NMWQCC groundwater standard.

3rd Quarter

Groundwater samples were collected during the third quarter on August 16, 2010. The third quarter results are summarized below:

- Four monitor wells were not sampled for BTEX constituents in August 2010 as they are on a sample reduction schedule. These wells are groundwater monitor wells MW-2, MW-3, MW-7 and MW-8;

- Groundwater monitoring wells MW-1, MW-5 and TMW-1 was not sampled during August 2010, due to the presence of PSH in the wells;

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

- Benzene was detected in one groundwater sample collected from MW-4 at a concentration of 0.2080 mg/l, which exceed their laboratory reporting limits and/or NMWQCC groundwater standard; and,

- Toluene, ethylbenzene and total xylenes were not detected in the groundwater samples collected in August 2010 exceeding their respective laboratory reporting limits and/or NMWQCC groundwater standard.

4th Quarter

Groundwater samples for the fourth quarter event were collected on November 11, 2010. Results of the fourth quarter results are summarized below:

- All monitoring wells not containing PSH were sampled for BTEX constituents in November 2010. Monitoring well MW-3 was inadvertently omitted from sampling;

- Groundwater monitor wells MW-1 and TMW-1 were not sampled during November 2010, due to the presence of PSH in the wells;

- Benzene was not detected in the groundwater samples collected from monitor wells MW-2 and MW-6 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-4 (at 0.0335 mg/l) and MW-5 (at 0.2260 mg/l) contained benzene at concentrations exceeding the NMWQCC groundwater standard for benzene; and,

- Toluene, ethylbenzene and total xylenes were not detected in the groundwater samples collected in November 2010 exceeding their respective laboratory reporting limits and/or NMWQCC groundwater standard.

3.3 Historical Data Comparisons

Measurable PSH has not been present in the groundwater monitor wells MW-2, MW-3 and MW-6 through MW-15 since they were installed at the site. Monitor wells that historically have contained PSH are MW-1 and MW-5, which had a sheen in 2010. 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 2010 the thickest PSH measurement was at 2.54 feet in June 2010. Monitor well MW-4 has historically contained PSH; however, in 2010, PSH was not 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 2010.

In 2010, analyses of PAH constituents in site groundwater were not performed, as monitoring wells not containing PSH historically were below regulatory threshold for these constituents.

4.0 FINDINGS AND RECOMMENDATION

4.1 Findings

The annual groundwater report presents the results of four groundwater monitoring and sampling events for the 2010 calendar year.

- Measurable PSH was detected in monitor wells MW-1 (sheen), MW-5 (sheen), and TMW-1 (from non-detect to 2.54 feet) in during 2010;
- The groundwater gradient was calculated during each quarterly sampling event for 2010, and indicated a relatively consistent southeast groundwater flow direction;
- From 2008 to 2010, groundwater elevations increased by an average of 0.58 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 BTEX constituents;
- Groundwater samples collected from monitor wells MW-2, MW-3, and MW-6, and MW-10 through MW-15 have not contained benzene concentrations exceeding the laboratory reporting limit and/or NMWQCC groundwater standard in 2010;
- Toluene, ethylbenzene, and m,p-xylenes, and o-xylenes were not detected in the groundwater samples collected from monitoring wells in 2010 at concentrations which exceeded their respective NMWQCC groundwater standards; and
- The extent of the PSH plume and the dissolved phase plume exceeding the NMWQCC groundwater standards has been defined. Detected concentrations of BTEX and PAHs have demonstrated a decreasing trend since groundwater sampling activities were initiated.
- In 2010, analyses of PAH constituents in site groundwater were not performed, as monitoring wells not containing PSH historically were below regulatory threshold for these constituents.

4.2 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 2011 in accordance with the NMOCD approved sample reduction plan;

- Submit an annual report to the NMOCD detailing the 2011 site activities.

DISTRIBUTION

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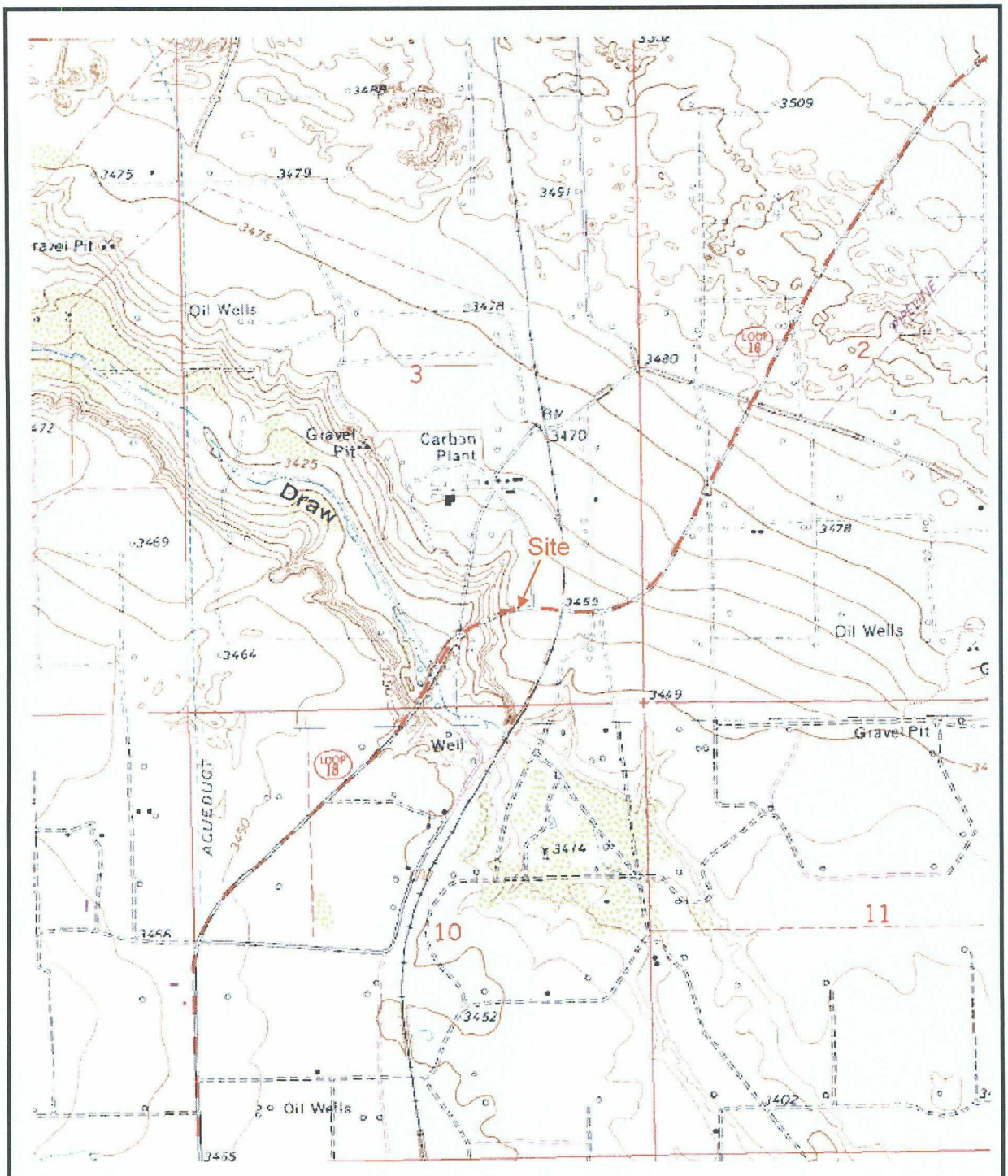
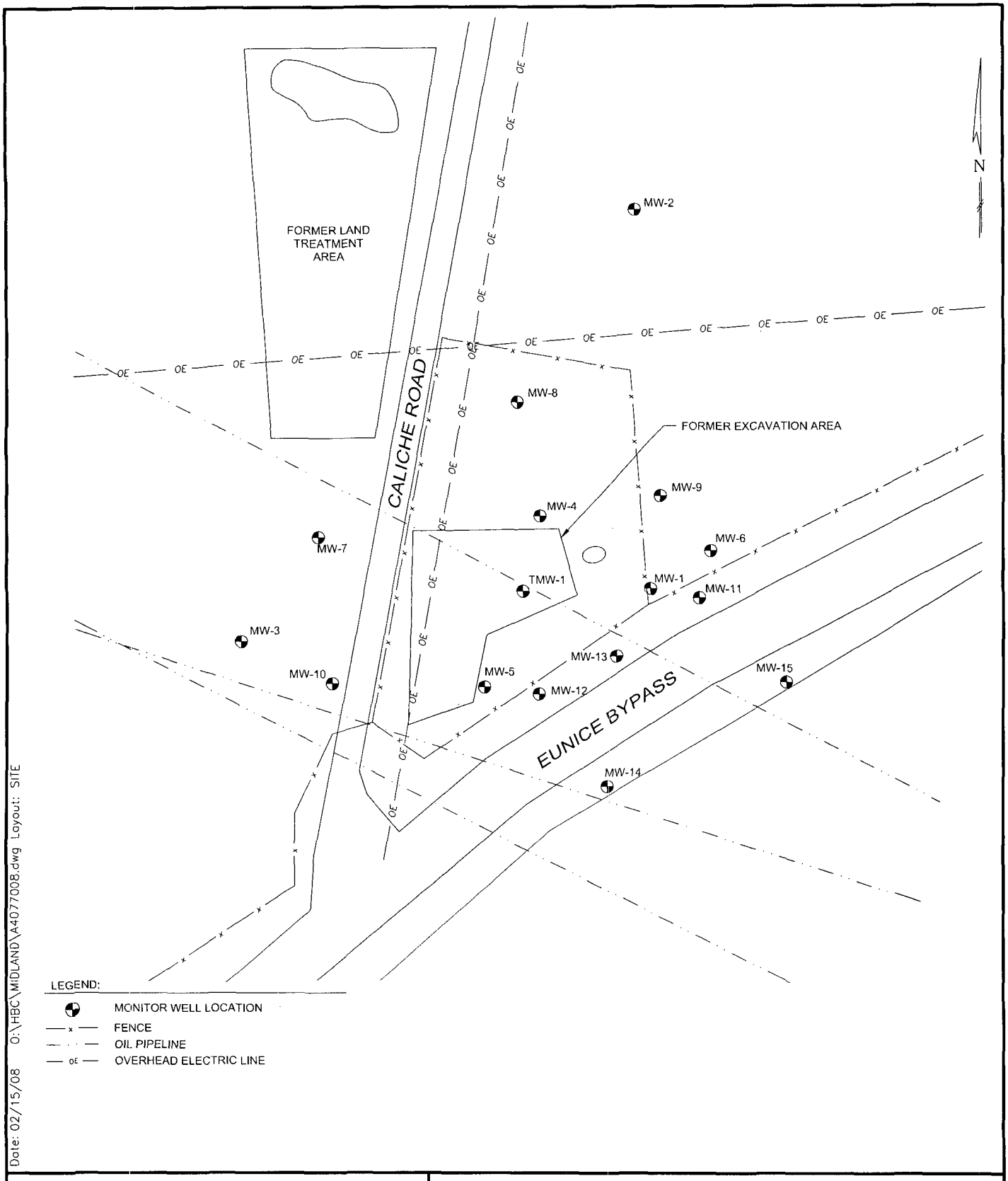
Terracon Consultants, Inc.
1211 West Florida Avenue
Midland, Texas 79701
bwbole@terracon.com

APPENDIX A

Figure 1 – Topographic Map
Figure 2 – Site Plan
Figure 3 – Groundwater Gradient Map (02/03/10)
Figure 4 – Groundwater Gradient Map (05/27/10)
Figure 5 – Groundwater Gradient Map (08/16/10)
Figure 6 – Groundwater Gradient Map (11/11/10)
Figure 7 – Groundwater Contaminant Concentration Map (02/05/10)
Figure 8 – Groundwater Contaminant Concentration Map (05/27/10)
Figure 9 – Groundwater Contaminant Concentration Map (08/16/10)
Figure 10 – Groundwater Contaminant Concentration Map (11/11/10)



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			



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THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

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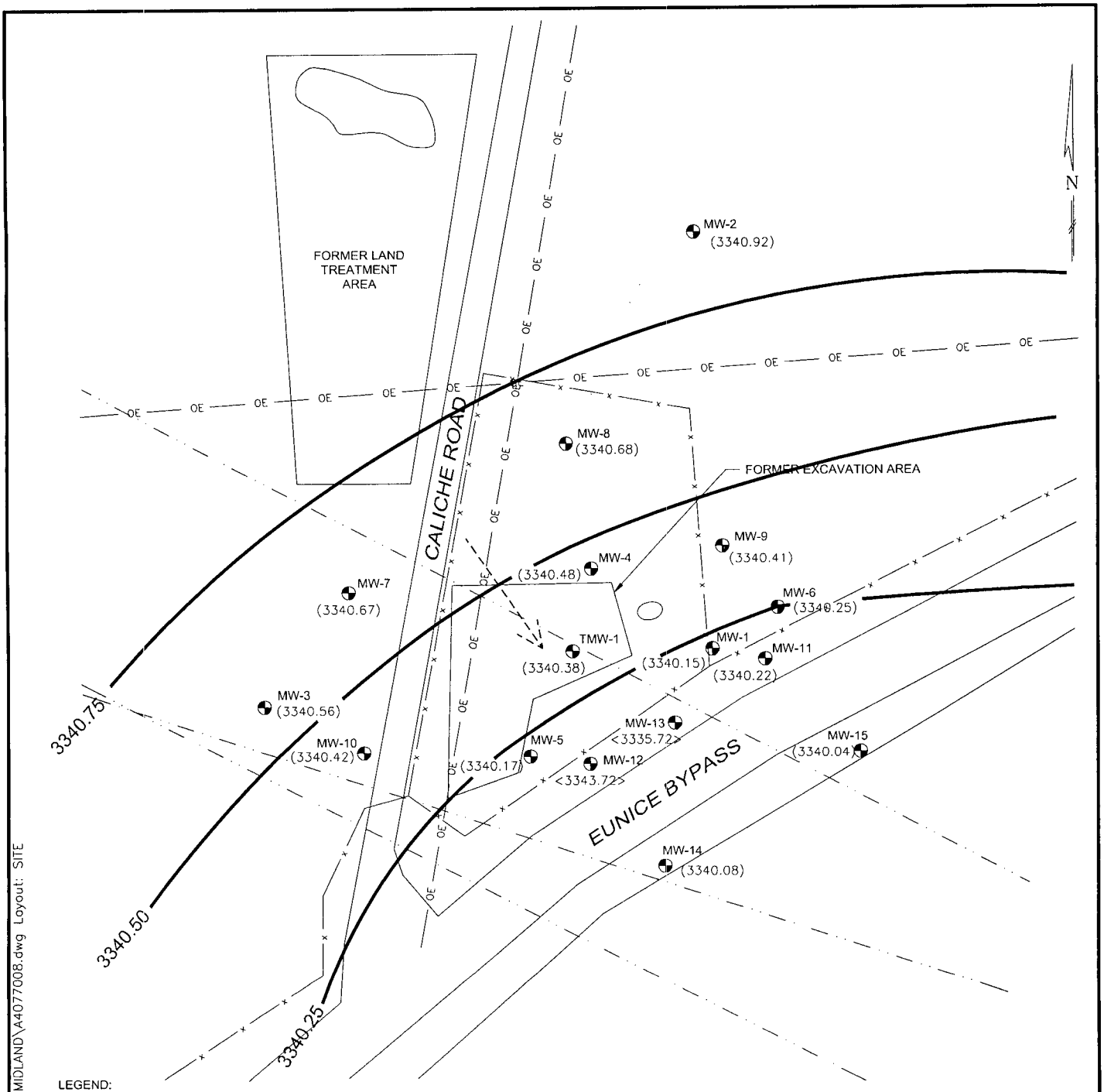
APPROXIMATE SCALE

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



LEGEND:

- MONITOR WELL LOCATION
- FENCE
- OIL PIPELINE
- OVERHEAD ELECTRIC LINE
- (3340.06) GROUNDWATER ELEVATION
- 3340.25 GROUNDWATER ELEVATION CONTOUR LINE
- GROUNDWATER FLOW DIRECTION
- < > MW-12 & MW-13 WERE NOT USED IN THE PREPARATION OF THIS GRADIENT MAP

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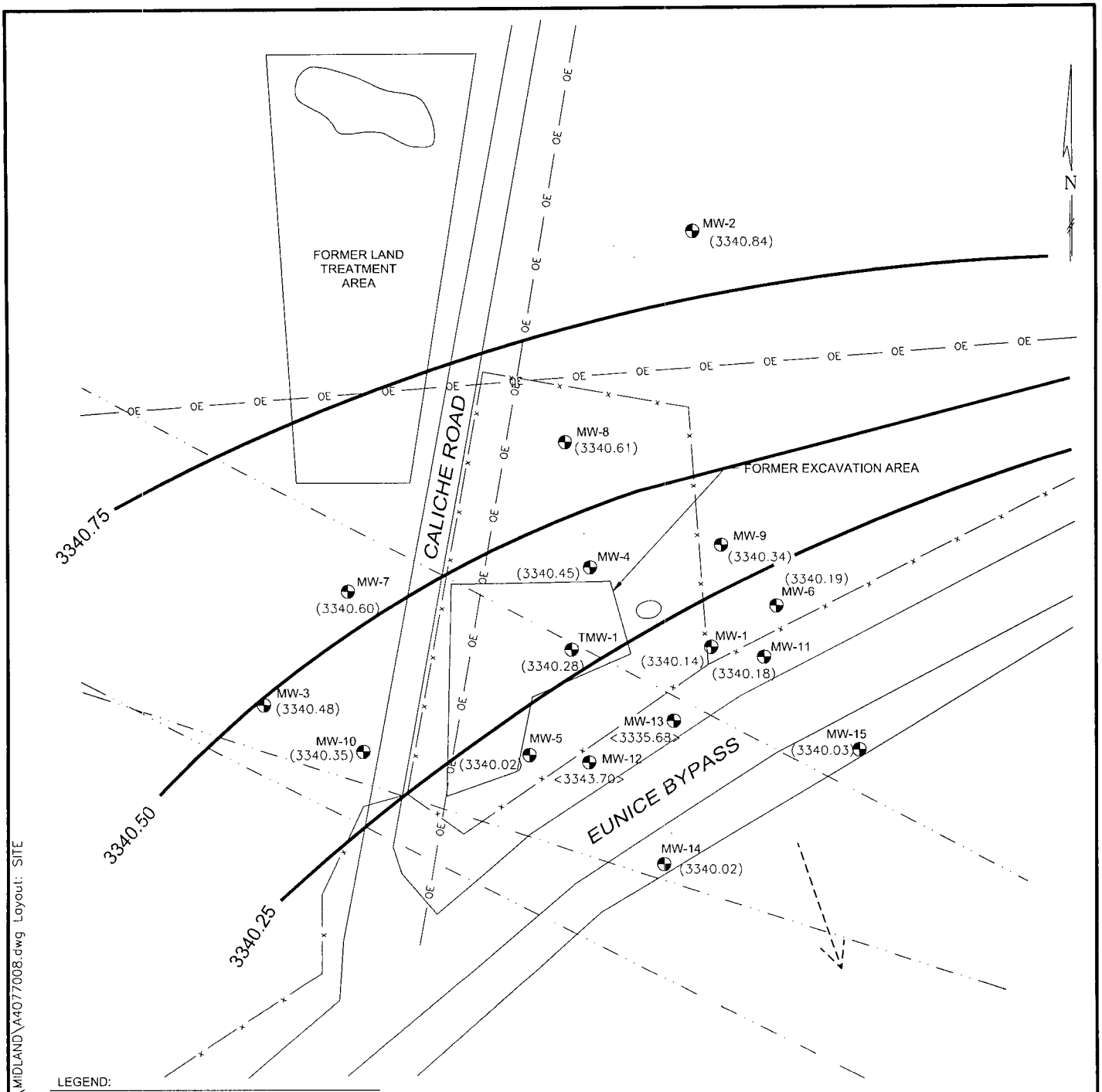
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon **Project No.: A4077008**

FIGURE 3: GROUNDWATER GRADIENT MAP (02/03/10)



LEGEND:

- MONITOR WELL LOCATION
- FENCE
- OIL PIPELINE
- OVERHEAD ELECTRIC LINE
- (3340.06) GROUNDWATER ELEVATION
- 3340.25 GROUNDWATER ELEVATION CONTOUR LINE
- GROUNDWATER FLOW DIRECTION
- < > MW-12 & MW-13 WERE NOT USED IN THE PREPARATION OF THIS GRADIENT MAP

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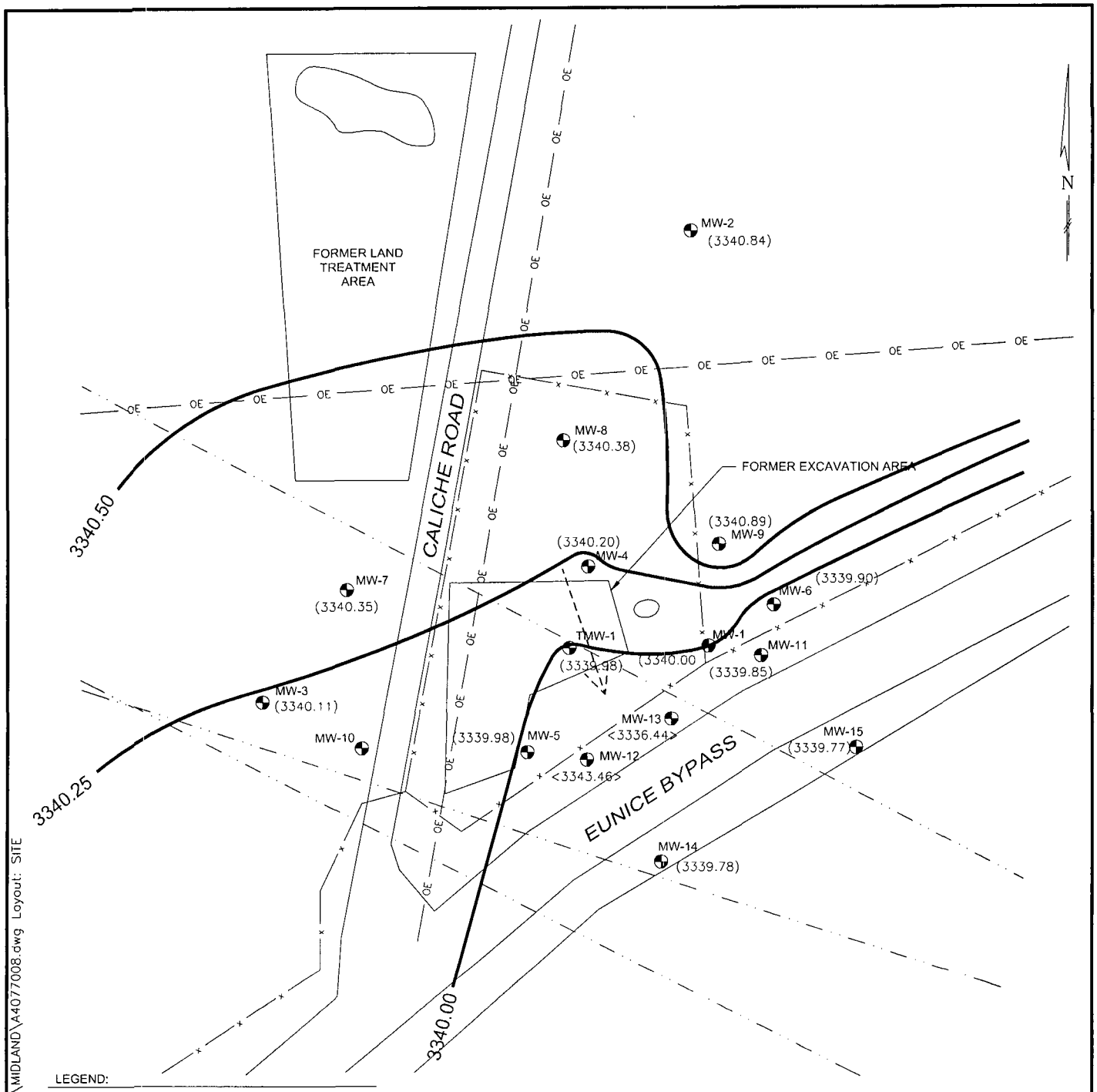
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon **Project No.: A4077008**

FIGURE 4: GROUNDWATER GRADIENT MAP (05/27/10)



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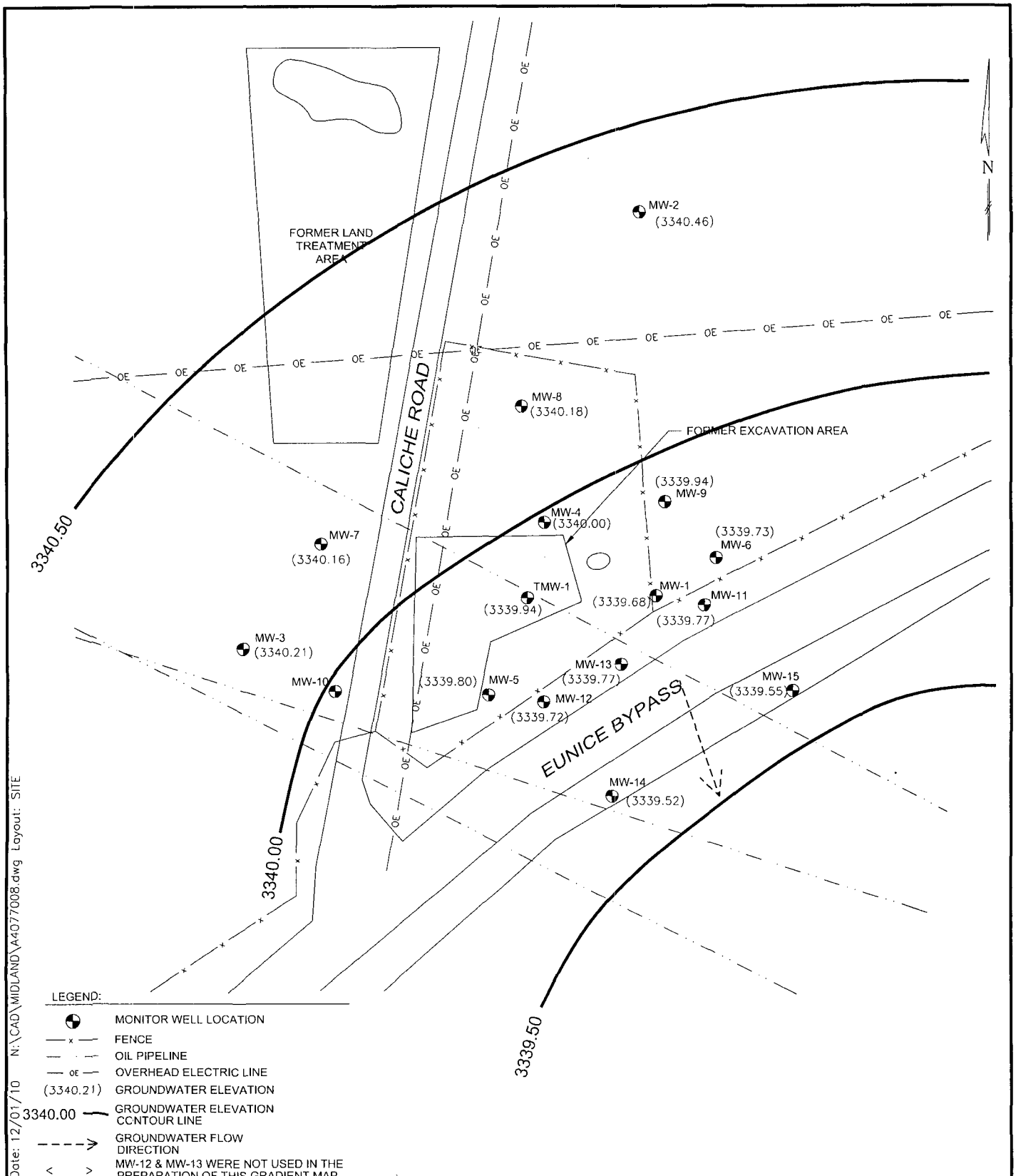
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon Project No.: A4077008

FIGURE 5: GROUNDWATER GRADIENT MAP (08/16/10)



LEGEND:

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- FENCE
- OIL PIPELINE
- OE — OVERHEAD ELECTRIC LINE
- (3340.21) GROUNDWATER ELEVATION
- 3340.00 GROUNDWATER ELEVATION CONTOUR LINE
- GROUNDWATER FLOW DIRECTION
- < > MW-12 & MW-13 WERE NOT USED IN THE PREPARATION OF THIS GRADIENT MAP

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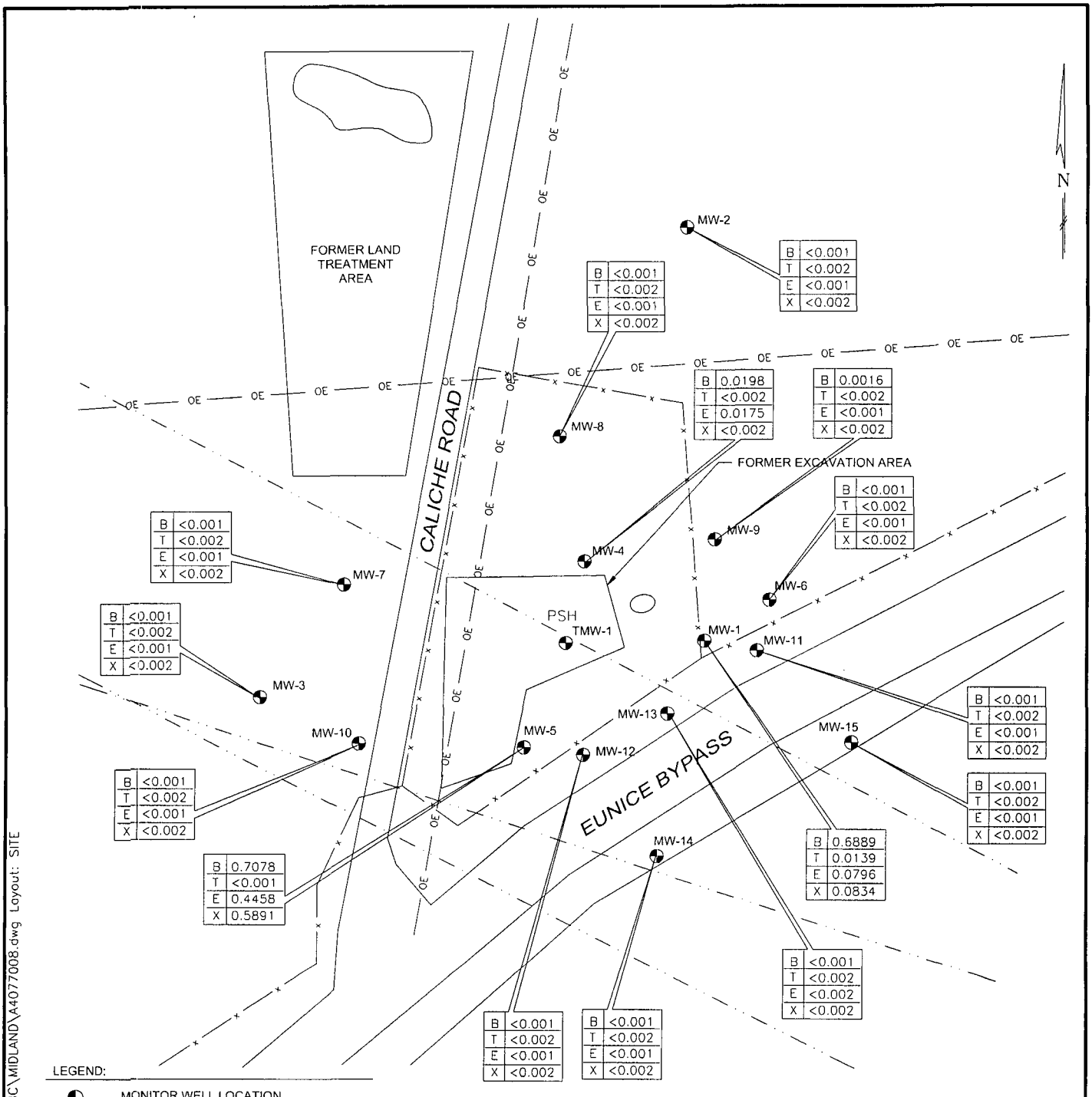
LIVINGSTON RIDGE TO HUGH P. SIMS
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon **Project No.: A4077008**

FIGURE 6: GROUNDWATER GRADIENT MAP (11/11/2010)



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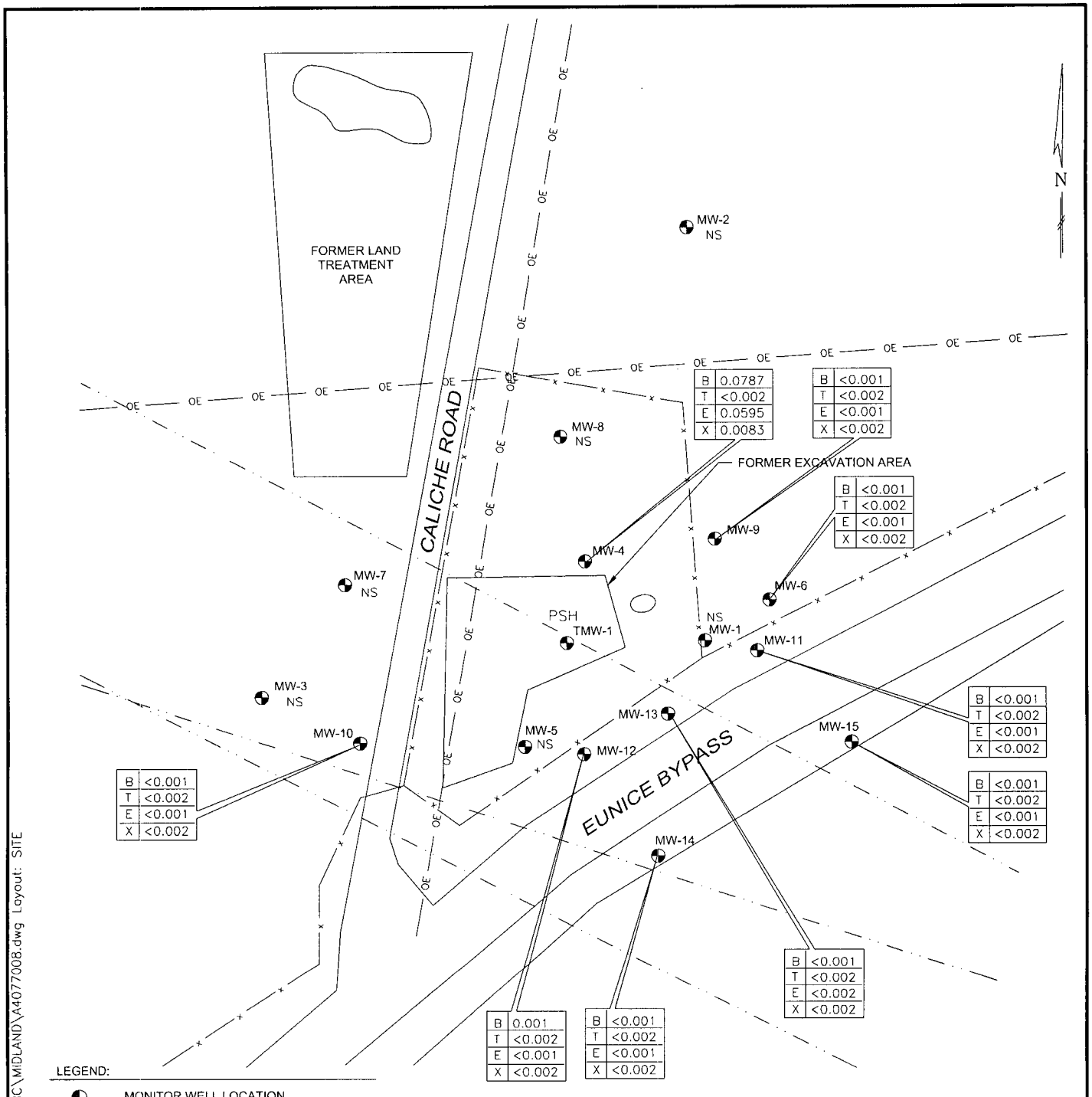
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398

Terracon **Project No.: A4077008**

FIGURE 7: GROUNDWATER CONTAMINANT CONCENTRATION MAP 02/05/10


FORMER LAND TREATMENT AREA
CALICHE ROAD
EUNICE BYPASS
FORMER EXCAVATION AREA
PSH
N
MW-1 NS
MW-2 NS
MW-3 NS
MW-4
MW-5 NS
MW-6
MW-7 NS
MW-8 NS
MW-9
MW-10
MW-11
MW-12
MW-13
MW-14
MW-15
TMW-1
OE
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LEGEND:
MONITOR WELL LOCATION
FENCE
OIL PIPELINE
OVERHEAD ELECTRIC LINE
B BENZENE
T TOLUENE
E ETHYLBENZENE
X TOTAL XYLENES
CONCENTRATIONS ARE IN mg/L
Date: 06/14/10 O:\HBC\MIDLAND\A4077008.dwg Layout: SITE
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APPROXIMATE SCALE
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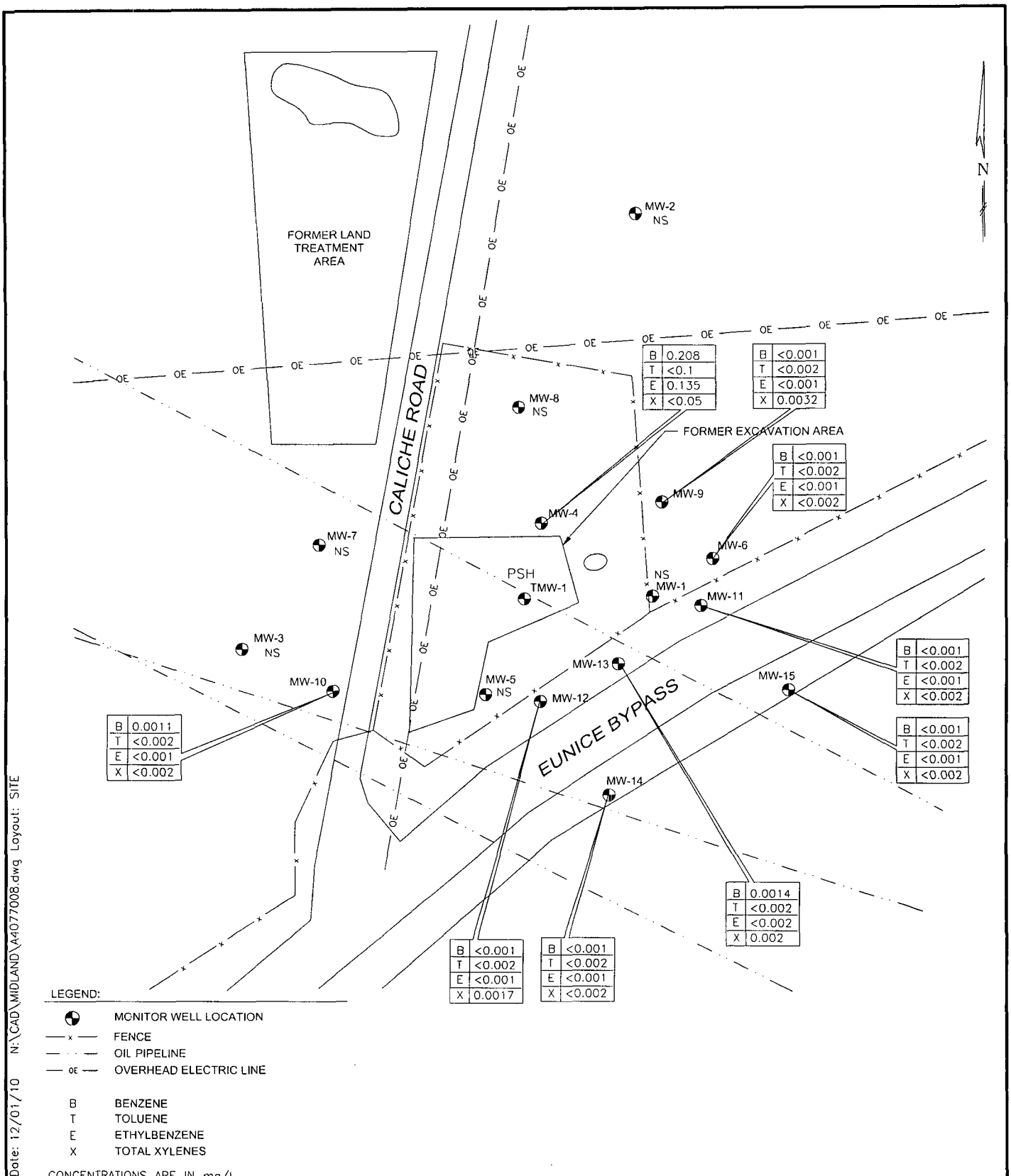
LIVINGSTON RIDGE TO HUGH P. SIMS
LEA COUNTY, NEW MEXICO
SRS# 2001-11005, NMOCD File# 1R-0398
Terracon Project No.: A4077008
FIGURE 8: GROUNDWATER CONTAMINANT CONCENTRATION MAP 05/27/10



Date: 12/01/10 N:\CAD\MIDLAND\A4077008.dwg Layout: SITE

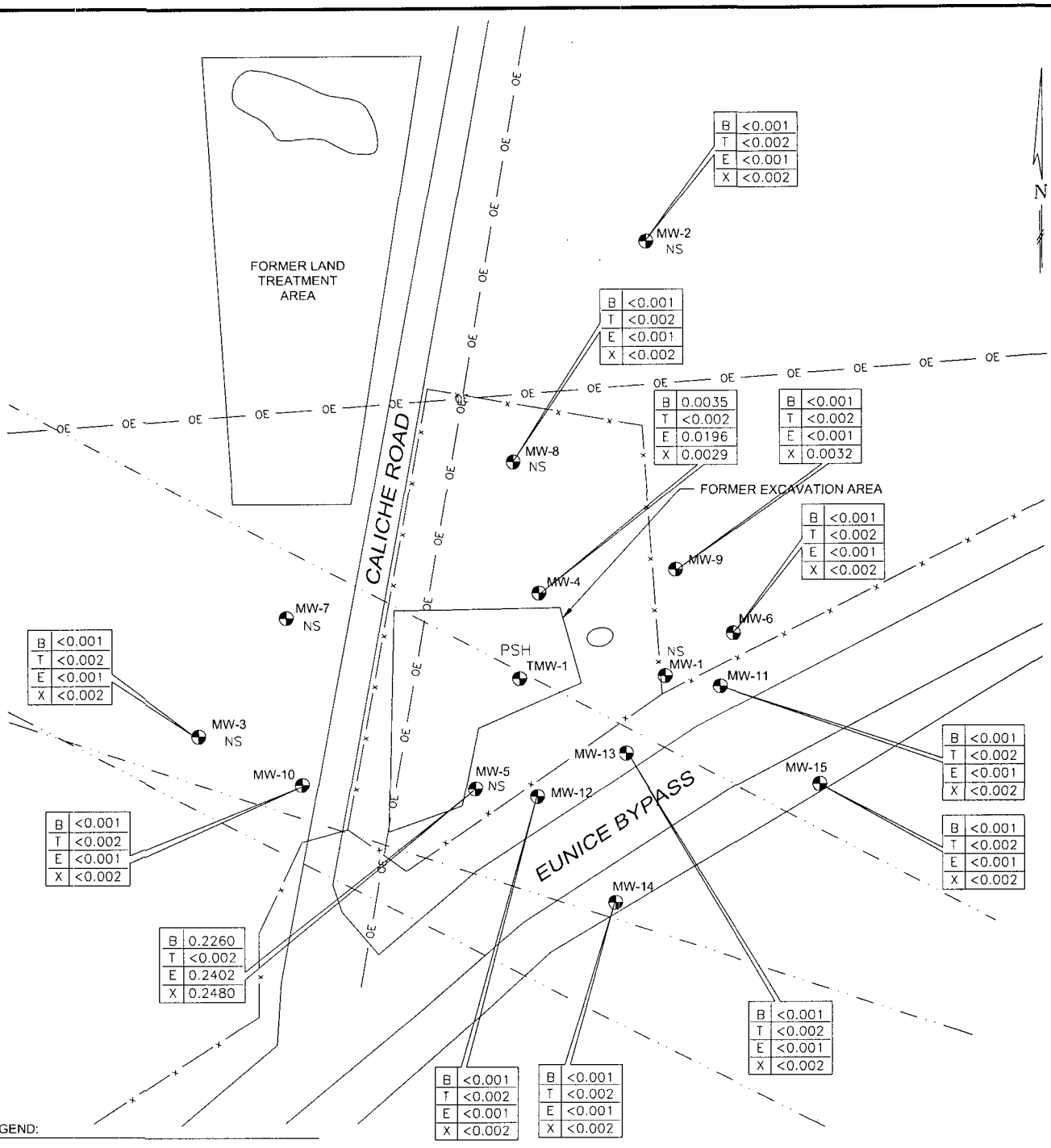
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

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 9: GROUNDWATER CONTAMINANT CONCENTRATION MAP 08/16/10



LEGEND:

- MONITOR WELL LOCATION
- FENCE
- OIL PIPELINE
- OE — OVERHEAD ELECTRIC LINE

B BENZENE
T TOLUENE
E ETHYLBENZENE
X TOTAL XYLENES

CONCENTRATIONS ARE IN mg/L

Date: 12/01/10 N:\CAD\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 (11/11/10)

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			33.94	0.00	3,340.29	0.00	0.00
MW - 1	11/10/09			33.97	0.00	3,340.26	1.00	24.00
MW - 1	01/08/10			33.93	0.00	3,340.30	0.00	15.00
MW - 1	01/22/10			33.94	0.00	3,340.29	0.00	10.00
MW - 1	01/26/10			33.09	0.00	3,341.14	0.00	0.00
MW - 1	02/03/10			34.08	0.00	3,340.15	0.00	0.00
MW - 1	02/10/10			33.97	0.00	3,340.26	0.00	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)
MW - 1	02/22/10			33.92	0.00	3,340.31	0.00	30.00
MW - 1	03/09/10			33.95	0.00	3,340.28	0.00	50.00
MW - 1	03/24/10			34.00	0.00	3,340.23	0.00	50.00
MW - 1	04/12/10			33.92	0.00	3,340.31	0.00	50.00
MW - 1	04/27/10			34.93	0.00	3,339.30	0.00	50.00
MW - 1	05/27/10			34.09	0.00	3,340.14	0.00	0.00
MW - 1	06/21/10			34.15	0.00	3,340.08	0.00	45.00
MW - 1	07/07/10			34.13	0.00	3,340.10	0.00	50.00
MW - 1	07/20/10			34.00	0.00	3,340.23	0.00	55.00
MW - 1	08/03/10			34.16	0.00	3,340.07	0.00	50.00
MW - 1	08/16/10			34.23	0.00	3,340.00	0.00	45.00
MW - 1	09/02/10			34.28	0.00	3,339.95	0.00	30.00
MW - 1	09/17/10			34.36	0.00	3,339.87	0.00	30.00
MW - 1	10/05/10			34.43	0.00	3,339.80	0.00	20.00
MW - 1	11/11/10			34.55	0.00	3,339.68	0.00	0.00
MW - 1	12/15/10		34.39	34.42	0.03	3,339.84	0.00	0.00
MW - 2	11/16/07	3,378.27		35.88	0.00	3,342.39	0.00	0.00
MW - 2	02/29/08			36.04	0.00	3,342.23	0.00	0.00
MW - 2	05/28/08			36.15	0.00	3,342.12	0.00	0.00
MW - 2	08/21/08			36.65	0.00	3,341.62	0.00	0.00
MW - 2	11/06/08			36.49	0.00	3,341.78	0.00	0.00
MW - 2	02/09/09			36.55	0.00	3,341.72	0.00	0.00
MW - 2	05/14/09			36.70	0.00	3,341.57	0.00	0.00
MW - 2	08/12/09			37.05	0.00	3,341.22	0.00	0.00
MW - 2	11/10/09			37.34	0.00	3,340.93	0.00	0.00
MW - 2	02/03/10			37.35	0.00	3,340.92	0.00	0.00
MW - 2	05/27/10			37.43	0.00	3,340.84	0.00	0.00
MW - 2	08/16/10			37.64	0.00	3,340.63	0.00	0.00
MW - 2	11/11/10			37.81	0.00	3,340.46	0.00	0.00
MW - 3	11/16/07	3,367.36		25.28	0.00	3,342.08	0.00	0.00
MW - 3	02/29/08			25.44	0.00	3,341.92	0.00	0.00
MW - 3	05/28/08			25.55	0.00	3,341.81	0.00	0.00
MW - 3	08/21/08			26.11	0.00	3,341.25	0.00	0.00
MW - 3	11/06/08			25.89	0.00	3,341.47	0.00	0.00
MW - 3	02/09/09			25.98	0.00	3,341.38	0.00	0.00
MW - 3	05/14/09			26.18	0.00	3,341.18	0.00	0.00
MW - 3	08/13/09			26.48	0.00	3,340.88	0.00	0.00
MW - 3	11/10/09			26.83	0.00	3,340.53	0.00	0.00
MW - 3	02/03/10			26.80	0.00	3,340.56	0.00	0.00
MW - 3	05/27/10			26.88	0.00	3,340.48	0.00	0.00
MW - 3	08/16/10			27.13	0.00	3,340.23	0.00	0.00
MW - 3	11/11/10			27.15	0.00	3,340.21	0.00	0.00
MW - 4	12/27/07	3,372.73		30.69	0.00	3,342.04	0.00	0.00
MW - 4	01/18/08			30.78	0.00	3,341.95	0.00	0.00
MW - 4	02/20/08			31.83	0.00	3,340.90	0.00	0.00
MW - 4	02/29/08			30.86	0.00	3,341.87	0.00	0.00
MW - 4	04/30/08			30.82	0.00	3,341.91	0.00	0.00
MW - 4	05/28/08			31.09	0.00	3,341.64	0.00	0.00
MW - 4	06/25/08			37.66	0.00	3,335.07	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	07/02/08			31.28	0.00	3,341.45	0.00	20.00
MW - 4	07/07/08			31.34	0.00	3,341.39	0.00	10.00
MW - 4	07/14/08			34.51	0.00	3,338.22	0.00	25.00
MW - 4	07/22/08			31.39	0.00	3,341.34	0.00	10.00
MW - 4	07/30/08			31.40	0.00	3,341.33	0.00	10.00
MW - 4	08/05/08			31.50	0.00	3,341.23	0.00	10.00
MW - 4	08/14/08			31.55	0.00	3,341.18	0.00	5.00
MW - 4	08/21/08			31.43	0.00	3,341.30	0.00	0.00
MW - 4	08/27/08			31.42	0.00	3,341.31	0.00	25.00
MW - 4	09/03/08							25.00
MW - 4	09/20/08			31.34	0.00	3,341.39	0.00	30.00
MW - 4	09/29/08			31.34	0.00	3,341.39	0.00	40.00
MW - 4	11/06/08			31.38	0.00	3,341.35	0.00	0.00
MW - 4	11/15/08			31.40	0.00	3,341.33	0.00	50.00
MW - 4	11/24/08			31.35	0.00	3,341.38	0.00	25.00
MW - 4	11/26/08			31.34	0.00	3,341.39	0.00	25.00
MW - 4	12/20/08			31.39	0.00	3,341.34	0.00	50.00
MW - 4	01/16/09			31.42	0.00	3,341.31	0.00	0.00
MW - 4	02/09/09			31.39	0.00	3,341.34	0.00	0.00
MW - 4	02/25/09				0.00		0.00	50.00
MW - 4	03/05/09				0.00		0.00	50.00
MW - 4	03/11/09				0.00		0.00	50.00
MW - 4	03/19/09				0.00		0.00	50.00
MW - 4	04/08/09			31.10	0.00	3,341.63	0.00	50.00
MW - 4	04/16/09			31.50	0.00	3,341.23	0.00	35.00
MW - 4	04/22/09			31.57	0.00	3,341.16	0.00	50.00
MW - 4	04/29/08				0.00		0.00	45.00
MW - 4	05/06/09				0.00		0.00	50.00
MW - 4	05/14/09			31.58	0.00	3,341.15	0.00	0.00
MW - 4	07/08/09			31.79	0.00	3,340.94	0.00	35.00
MW - 4	07/24/09			31.85	0.00	3,340.88	0.00	0.00
MW - 4	08/04/09			31.85	0.00	3,340.88	0.00	55.00
MW - 4	08/12/09			31.96	0.00	3,340.77	0.00	0.00
MW - 4	08/19/09			31.90	0.00	3,340.83	0.00	32.00
MW - 4	09/01/09			32.00	0.00	3,340.73	0.00	53.50
MW - 4	09/22/09			32.08	0.00	3,340.65	0.00	10.00
MW - 4	10/12/09			32.13	0.00	3,340.60	0.00	17.00
MW - 4	10/30/09			32.27	0.00	3,340.46	0.00	0.00
MW - 4	11/10/09			32.22	0.00	3,340.51	0.00	25.00
MW - 4	01/08/10			32.23	0.00	3,340.50	0.00	5.00
MW - 4	01/22/10			32.17	0.00	3,340.56	0.00	10.00
MW - 4	01/26/10			32.26	0.00	3,340.47	0.00	0.00
MW - 4	02/03/10			32.25	0.00	3,340.48	0.00	0.00
MW - 4	02/10/10			32.28	0.00	3,340.45	0.00	50.00
MW - 4	03/09/10			32.20	0.00	3,340.53	0.00	30.00
MW - 4	03/24/10			32.24	0.00	3,340.49	0.00	30.00
MW - 4	04/12/10			32.24	0.00	3,340.49	0.00	30.00
MW - 4	04/27/10			32.25	0.00	3,340.48	0.00	30.00
MW - 4	05/27/10			32.28	0.00	3,340.45	0.00	0.00
MW - 4	06/21/10			32.50	0.00	3,340.23	0.00	40.00
MW - 4	07/07/10			32.40	0.00	3,340.33	0.00	50.00
MW - 4	07/20/10			32.43	0.00	3,340.30	0.00	50.00

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	08/03/10			32.44	0.00	3,340.29	0.00	50.00
MW - 4	08/16/10			32.53	0.00	3,340.20	0.00	45.00
MW - 4	09/02/10			32.67	0.00	3,340.06	0.00	50.00
MW - 4	09/17/10			32.65	0.00	3,340.08	0.00	50.00
MW - 4	10/05/10			32.70	0.00	3,340.03	0.00	20.00
MW - 4	11/10/10			32.73	0.00	3,340.00	0.00	20.00
MW - 4	12/15/10			32.71	0.00	3,340.02	0.00	20.00
MW - 5	12/27/07	3,370.92		29.29	0.00	3,341.63	0.10	0.00
MW - 5	01/18/08			29.40	0.00	3,341.52	0.00	0.00
MW - 5	02/20/08			29.43	0.00	3,341.49	0.00	0.00
MW - 5	02/29/08			29.43	0.00	3,341.49	0.00	0.00
MW - 5	03/11/08			29.87	0.00	3,341.05	0.00	0.00
MW - 5	04/30/08			29.45	0.00	3,341.47	0.00	0.00
MW - 5	05/28/08			29.55	0.00	3,341.37	0.00	0.00
MW - 5	06/25/08			29.70	0.00	3,341.22	0.00	0.00
MW - 5	07/02/08			29.75	0.00	3,341.17	0.00	20.00
MW - 5	07/07/08			28.83	0.00	3,342.09	0.00	10.00
MW - 5	07/14/08			29.82	0.00	3,341.10	0.00	25.00
MW - 5	07/22/08			29.87	0.00	3,341.05	0.00	10.00
MW - 5	07/30/08			29.93	0.00	3,340.99	0.00	15.00
MW - 5	08/05/08			29.94	0.00	3,340.98	0.00	15.00
MW - 5	08/14/08			30.06	0.00	3,340.86	0.00	5.00
MW - 5	08/21/08			29.83	0.00	3,341.09	0.00	0.00
MW - 5	08/27/08			29.69	0.00	3,341.23	0.00	25.00
MW - 5	09/03/08							25.00
MW - 5	09/20/08			29.75	0.00	3,341.17	0.00	30.00
MW - 5	09/29/08			29.74	0.00	3,341.18	0.00	40.00
MW - 5	11/06/08			29.75	0.00	3,341.17	0.00	0.00
MW - 5	11/15/08			29.89	0.00	3,341.03	0.00	50.00
MW - 5	11/24/08			29.76	0.00	3,341.16	0.00	25.00
MW - 5	11/26/08			29.74	0.00	3,341.18	0.00	25.00
MW - 5	12/20/08			29.79	0.00	3,341.13	0.00	50.00
MW - 5	01/16/09			29.84	0.00	3,341.08	0.00	0.00
MW - 5	02/09/09			29.78	0.00	3,341.14	0.00	0.00
MW - 5	02/25/09				0.00		0.00	50.00
MW - 5	03/05/09				0.00		0.00	50.00
MW - 5	03/11/09				0.00		0.00	50.00
MW - 5	03/19/09				0.00		0.00	50.00
MW - 5	04/08/09			29.91	0.00	3,341.01	0.00	50.00
MW - 5	04/16/09			29.90	0.00	3,341.02	0.00	45.00
MW - 5	04/22/09			30.02	0.00	3,340.90	0.00	30.00
MW - 5	04/29/08			29.92	0.00	3,341.00	0.00	50.00
MW - 5	05/06/09				0.00		0.00	50.00
MW - 5	05/14/09			30.06	0.00	3,340.86	0.00	0.00
MW - 5	07/08/09			30.19	0.00	3,340.73	0.00	30.00
MW - 5	07/24/09			30.23	0.00	3,340.69	0.00	0.00
MW - 5	08/04/09			30.28	0.00	3,340.64	0.00	55.00
MW - 5	08/12/09			29.30	0.00	3,341.62	0.00	0.00
MW - 5	08/19/09			30.31	0.00	3,340.61	0.00	42.00
MW - 5	09/01/09			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

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	10/12/09			30.54	0.00	3,340.38	0.00	23.00
MW - 5	10/30/09			29.63	0.00	3,341.29	0.00	0.00
MW - 5	11/10/09			30.61	0.00	3,340.31	0.00	30.00
MW - 5	01/08/10			30.62	0.00	3,340.30	0.00	5.00
MW - 5	01/22/10		30.55	30.56	0.01	3,340.37	0.00	10.00
MW - 5	01/26/10		30.68	0.00	0.00	3,370.92	0.00	0.00
MW - 5	02/03/10			30.75	0.00	3,340.17	0.00	0.00
MW - 5	02/10/10			30.66	0.00	3,340.26	0.00	30.00
MW - 5	02/22/10			30.60	0.00	3,340.32	0.00	30.00
MW - 5	03/09/10			30.56	0.00	3,340.36	0.00	30.00
MW - 5	03/24/10			30.60	0.00	3,340.32	0.00	30.00
MW - 5	04/12/10			30.60	0.00	3,340.32	0.00	30.00
MW - 5	04/27/10			30.61	0.00	3,340.31	0.00	30.00
MW - 5	05/27/10			30.90	0.00	3,340.02	0.00	0.00
MW - 5	06/21/10			30.85	0.00	3,340.07	0.00	18.00
MW - 5	07/07/10			30.75	0.00	3,340.17	0.00	20.00
MW - 5	07/20/10			30.67	0.00	3,340.25	0.00	50.00
MW - 5	08/03/10			30.85	0.00	3,340.07	0.00	20.00
MW - 5	08/16/10			30.94	0.00	3,339.98	0.00	20.00
MW - 5	09/02/10			30.97	0.00	3,339.95	0.00	30.00
MW - 5	09/17/10			31.03	0.00	3,339.89	0.00	30.00
MW - 5	10/05/10			31.13	0.00	3,339.79	0.00	25.00
MW - 5	11/11/10			31.12	0.00	3,339.80	0.00	20.00
MW - 5	12/15/10			31.00	0.00	3,339.92	0.00	30.00
MW - 6	11/16/07	3,377.02		35.22	0.00	3,341.80	0.00	0.00
MW - 6	02/29/08			35.36	0.00	3,341.66	0.00	0.00
MW - 6	03/11/08			35.37	0.00	3,341.65	0.00	0.00
MW - 6	05/28/08			35.46	0.00	3,341.56	0.00	0.00
MW - 6	08/21/08			35.99	0.00	3,341.03	0.00	0.00
MW - 6	11/06/08			35.94	0.00	3,341.08	0.00	0.00
MW - 6	02/09/09			35.91	0.00	3,341.11	0.00	0.00
MW - 6	05/14/09			35.96	0.00	3,341.06	0.00	0.00
MW - 6	08/12/09			36.53	0.00	3,340.49	0.00	0.00
MW - 6	11/10/09			36.77	0.00	3,340.25	0.00	0.00
MW - 6	02/03/10			36.77	0.00	3,340.25	0.00	0.00
MW - 6	05/27/10			36.83	0.00	3,340.19	0.00	0.00
MW - 6	08/16/10			37.12	0.00	3,339.90	0.00	0.00
MW - 6	11/11/10			37.29	0.00	3,339.73	0.00	0.00
MW - 7	11/16/07	3,369.47		27.26	0.00	3,342.21	0.00	0.00
MW - 7	02/29/08			27.43	0.00	3,342.04	0.00	0.00
MW - 7	05/28/08			27.54	0.00	3,341.93	0.00	0.00
MW - 7	08/21/08			28.09	0.00	3,341.38	0.00	0.00
MW - 7	11/06/08			27.89	0.00	3,341.58	0.00	0.00
MW - 7	02/09/09			27.97	0.00	3,341.50	0.00	0.00
MW - 7	05/14/09			28.29	0.00	3,341.18	0.00	0.00
MW - 7	08/13/09			28.46	0.00	3,341.01	0.00	0.00
MW - 7	11/10/09			28.80	0.00	3,340.67	0.00	0.00
MW - 7	02/03/10			28.80	0.00	3,340.67	0.00	0.00
MW - 7	05/27/10			28.87	0.00	3,340.60	0.00	0.00
MW - 7	08/16/10			29.12	0.00	3,340.35	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 - 7	11/11/10			29.31	0.00	3,340.16	0.00	0.00
MW - 8	11/16/07	3,373.77		31.58	0.00	3,342.19	0.00	0.00
MW - 8	02/29/08			31.72	0.00	3,342.05	0.00	0.00
MW - 8	05/28/08			31.96	0.00	3,341.81	0.00	0.00
MW - 8	08/21/08			32.33	0.00	3,341.44	0.00	0.00
MW - 8	11/06/08			32.19	0.00	3,341.58	0.00	0.00
MW - 8	02/09/09			32.27	0.00	3,341.50	0.00	0.00
MW - 8	05/14/09			32.52	0.00	3,341.25	0.00	0.00
MW - 8	08/12/09			32.78	0.00	3,340.99	0.00	0.00
MW - 8	11/10/09			33.09	0.00	3,340.68	0.00	0.00
MW - 8	02/03/10			33.09	0.00	3,340.68	0.00	0.00
MW - 8	05/27/10			33.16	0.00	3,340.61	0.00	0.00
MW - 8	08/16/10			33.39	0.00	3,340.38	0.00	0.00
MW - 8	11/11/10			33.59	0.00	3,340.18	0.00	0.00
MW - 9	11/16/07	3,375.92		34.02	0.00	3,341.90	0.00	0.00
MW - 9	02/29/08			34.18	0.00	3,341.74	0.00	0.00
MW - 9	05/28/08			34.45	0.00	3,341.47	0.00	0.00
MW - 9	08/21/08			34.79	0.00	3,341.13	0.00	0.00
MW - 9	11/06/08			34.84	0.00	3,341.08	0.00	0.00
MW - 9	02/09/09			34.71	0.00	3,341.21	0.00	0.00
MW - 9	05/14/09			34.23	0.00	3,341.69	0.00	0.00
MW - 9	08/12/09			35.16	0.00	3,340.76	0.00	0.00
MW - 9	11/10/09			35.51	0.00	3,340.41	0.00	0.00
MW - 9	02/03/10			35.51	0.00	3,340.41	0.00	0.00
MW - 9	05/27/10			35.58	0.00	3,340.34	0.00	0.00
MW - 9	08/16/10			35.03	0.00	3,340.89	0.00	0.00
MW - 9	11/11/10			35.98	0.00	3,339.94	0.00	0.00
MW - 10	11/16/07	3,370.17		28.20	0.00	3,341.97	0.00	0.00
MW - 10	02/29/08			28.42	0.00	3,341.75	0.00	0.00
MW - 10	05/28/08			28.48	0.00	3,341.69	0.00	0.00
MW - 10	08/21/08			29.04	0.00	3,341.13	0.00	0.00
MW - 10	11/06/08			28.82	0.00	3,341.35	0.00	0.00
MW - 10	02/09/09			28.91	0.00	3,341.26	0.00	0.00
MW - 10	05/14/09			29.07	0.00	3,341.10	0.00	0.00
MW - 10	08/12/09			29.34	0.00	3,340.83	0.00	0.00
MW - 10	11/10/09			29.77	0.00	3,340.40	0.00	0.00
MW - 10	02/03/10			29.75	0.00	3,340.42	0.00	0.00
MW - 10	05/27/10			29.82	0.00	3,340.35	0.00	0.00
MW - 10	08/16/10			30.06	0.00	3,340.11	0.00	0.00
MW - 10	11/11/10			30.32	0.00	3,339.85	0.00	0.00
MW-11	11/16/07	3,373.96		29.69	0.00	3,344.27	0.00	0.00
MW-11	02/29/08			29.30	0.00	3,344.66	0.00	0.00
MW-11	05/28/08			32.41	0.00	3,341.55	0.00	0.00
MW-11	08/21/08			32.98	0.00	3,340.98	0.00	0.00
MW-11	11/06/08			32.85	0.00	3,341.11	0.00	0.00
MW-11	02/09/09			32.91	0.00	3,341.05	0.00	0.00
MW-11	05/14/09			33.01	0.00	3,340.95	0.00	0.00
MW-11	08/12/09			33.35	0.00	3,340.61	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-11	11/10/09			33.71	0.00	3,340.25	0.00	0.00
MW-11	02/03/10			33.74	0.00	3,340.22	0.00	0.00
MW-11	05/27/10			33.78	0.00	3,340.18	0.00	0.00
MW-11	08/16/10			34.11	0.00	3,339.85	0.00	0.00
MW-11	11/11/10			34.19	0.00	3,339.77	0.00	0.00
MW- 12	11/16/07	3,372.41		33.32	0.00	3,339.09	0.00	0.00
MW- 12	02/29/08			27.29	0.00	3,345.12	0.00	0.00
MW- 12	05/28/08			27.35	0.00	3,345.06	0.00	0.00
MW- 12	08/21/08			27.92	0.00	3,344.49	0.00	0.00
MW- 12	11/06/08			27.74	0.00	3,344.67	0.00	0.00
MW- 12	02/09/09			27.83	0.00	3,344.58	0.00	0.00
MW- 12	05/14/09			27.96	0.00	3,344.45	0.00	0.00
MW- 12	08/13/09			28.26	0.00	3,344.15	0.00	0.00
MW- 12	11/10/09			28.66	0.00	3,343.75	0.00	0.00
MW- 12	02/03/10			28.69	0.00	3,343.72	0.00	0.00
MW- 12	05/27/10			28.71	0.00	3,343.70	0.00	0.00
MW- 12	08/16/10			28.95	0.00	3,343.46	0.00	0.00
MW- 12	11/11/10			32.69	0.00	3,339.72	0.00	0.00
MW- 13	11/16/07	3,368.91		27.11	0.00	3,341.80	0.00	0.00
MW- 13	02/29/08			30.80	0.00	3,338.11	0.00	0.00
MW- 13	05/28/08			30.28	0.00	3,338.63	0.00	0.00
MW- 13	08/21/08			31.43	0.00	3,337.48	0.00	0.00
MW- 13	11/06/08			31.26	0.00	3,337.65	0.00	0.00
MW- 13	02/09/09			31.36	0.00	3,337.55	0.00	0.00
MW- 13	05/14/09			31.51	0.00	3,337.40	0.00	0.00
MW- 13	08/12/09			31.81	0.00	3,337.10	0.00	0.00
MW- 13	11/10/09			32.17	0.00	3,336.74	0.00	0.00
MW- 13	02/03/10			33.19	0.00	3,335.72	0.00	0.00
MW- 13	05/27/10			33.23	0.00	3,335.68	0.00	0.00
MW- 13	08/16/10			32.47	0.00	3,336.44	0.00	0.00
MW- 13	11/11/10			29.14	0.00	3,339.77	0.00	0.00
MW- 14	11/16/07	3,371.54		29.94	0.00	3,341.60	0.00	0.00
MW- 14	02/29/08			30.08	0.00	3,341.46	0.00	0.00
MW- 14	05/28/08			30.27	0.00	3,341.27	0.00	0.00
MW- 14	08/21/08			30.70	0.00	3,340.84	0.00	0.00
MW- 14	11/06/08			30.55	0.00	3,340.99	0.00	0.00
MW- 14	02/09/09			30.65	0.00	3,340.89	0.00	0.00
MW- 14	05/14/09			30.75	0.00	3,340.79	0.00	0.00
MW- 14	08/12/09			31.11	0.00	3,340.43	0.00	0.00
MW- 14	11/10/09			31.46	0.00	3,340.08	0.00	0.00
MW- 14	02/03/10			31.48	0.00	3,340.06	0.00	0.00
MW- 14	05/27/10			31.52	0.00	3,340.02	0.00	0.00
MW- 14	08/16/10			31.76	0.00	3,339.78	0.00	0.00
MW- 14	11/11/10			31.97	0.00	3,339.57	0.00	0.00
MW- 15	11/16/07	3,377.64		36.09	0.00	3,341.55	0.00	0.00
MW- 15	02/29/08			36.20	0.00	3,341.44	0.00	0.00
MW- 15	05/28/08			36.31	0.00	3,341.33	0.00	0.00
MW- 15	08/21/08			36.80	0.00	3,340.84	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- 15	11/06/08			36.69	0.00	3,340.95	0.00	0.00
MW- 15	02/09/09			36.77	0.00	3,340.87	0.00	0.00
MW- 15	05/14/09			36.91	0.00	3,340.73	0.00	0.00
MW- 15	08/12/09			37.21	0.00	3,340.43	0.00	0.00
MW- 15	11/10/09			37.57	0.00	3,340.07	0.00	0.00
MW- 15	02/03/10			37.60	0.00	3,340.04	0.00	0.00
MW- 15	05/27/10			37.61	0.00	3,340.03	0.00	0.00
MW- 15	08/16/10			37.87	0.00	3,339.77	0.00	0.00
MW- 15	11/11/10			38.09	0.00	3,339.55	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
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		0.00	0.00	0.00		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

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	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
TMW-1	01/08/10		31.86	32.49	0.63	3,340.29	1.00	15.00
TMW-1	01/22/10		31.70	32.55	0.85	3,340.41	8.00	5.00
TMW-1	01/26/10		32.65	32.80	0.15	3,339.57	0.10	10.00
TMW-1	02/03/10		31.75	32.49	0.74	3,340.38	0.10	10.00
TMW-1	02/10/10		31.75	32.77	1.02	3,340.34	0.10	20.00
TMW-1	02/22/10		31.64	33.07	1.43	3,340.39	4.00	50.00
TMW-1	03/09/10		31.65	32.87	1.22	3,340.41	4.00	50.00
TMW-1	03/09/10		31.65	32.87	1.22	3,340.41	4.00	50.00
TMW-1	03/24/10		31.65	33.07	1.42	3,340.38	4.00	30.00
TMW-1	04/12/10		31.57	33.61	2.04	3,340.36	4.00	30.00
TMW-1	04/27/10		31.66	33.02	1.36	3,340.38	4.00	50.00
TMW-1	05/27/10		31.70	33.45	1.75	3,340.28	0.00	0.00
TMW-1	06/21/10		31.70	34.24	2.54	3,340.16	2.50	50.00
TMW-1	07/07/10		31.87	32.96	1.09	3,340.21	0.00	50.00
TMW-1	07/20/10		31.81	32.94	1.13	3,340.26	0.00	50.00
TMW-1	08/03/10		32.00	33.09	1.09	3,340.08	0.00	0.00
TMW-1	08/16/10		32.02	33.61	1.59	3,339.98	2.00	30.00
TMW-1	09/02/10		32.02	33.74	1.72	3,339.96	2.00	50.00
TMW-1	09/17/10		32.15	33.24	1.09	3,339.93	2.00	50.00
TMW-1	10/05/10		32.12	33.94	1.82	3,339.85	2.00	30.00
TMW-1	11/11/10		32.23	33.39	1.16	3,339.84	0.00	30.00
TMW-1	12/15/10		32.16	33.56	1.40	3,339.87	0.00	0.00
							94.50	Total Gallons
							2.25	Total Barrels

Elevations are based on the North American Vertical Datum of 1929.
PSH - Phase Separated Hydrocarbons
ND - PSH not detected
(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-	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-1	02/05/10	**0.6889**	0.0139	0.0796	0.0556	0.0278	NA	NA	NA	NA
MW-1	05/27/10	Not Sampled Due to the Presence of PSH								
MW-1	08/16/10	Not Sampled Due to the Presence of PSH								
MW-1	11/11/10	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								
MW-2	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-2	05/27/10	Not Sampled Due to Sample Reduction								
MW-2	08/16/10	Not Sampled Due to Sample Reduction								
MW-2	11/11/10	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
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								

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-	o-Xylene	Gasoline	Diesel	Oil	Total
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-3	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-3	05/27/10	Not Sampled Due to Sample Reduction								
MW-3	08/16/10	Not Sampled Due to Sample Reduction								
MW-3	11/11/10	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
MW-4	02/05/10	**0.0198**	<0.002	0.0175	<0.002	<0.001	NA	NA	NA	NA
MW-4	05/27/10	**0.0787**	<0.002	0.0595	0.0083	<0.001	NA	NA	NA	NA
MW-4	08/16/10	**0.208**	<0.1	0.135	<0.1	<0.05	NA	NA	NA	NA
MW-4	11/11/10	**0.0335**	<0.002	0.0196	0.0029	<0.001	NA	NA	NA	NA
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								

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-	o-Xylene	Gasoline	Diesel	Oil	Total
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-5	02/05/10	**0.7078**	<0.01	0.4458	0.4786	0.1105	NA	NA	NA	NA
MW-5	05/27/10	Not Sampled Due to the Presence of PSH								
MW-5	08/16/10	Not Sampled Due to the Presence of PSH								
MW-5	11/11/10	0.226	<0.001	0.2402	0.1391	0.1087	NA	NA	NA	NA
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
MW-6	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	05/27/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	08/16/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	11/11/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
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								

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-	o-Xylene	Gasoline	Diesel	Oil	Total
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-7	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-7	05/27/10	Not Sampled Due to Sample Reduction								
MW-7	08/16/10	Not Sampled Due to Sample Reduction								
MW-7	11/11/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
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								
MW-8	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	<2.5	<2.5	<2.5	<2.5
MW-8	05/27/10	Not Sampled Due to Sample Reduction								
MW-8	08/16/10	Not Sampled Due to Sample Reduction								
MW-8	11/11/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
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

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-	o-Xylene	Gasoline	Diesel	Oil	Total
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-9	02/05/10	0.0016	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	05/27/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-9	08/16/10	<0.001	<0.002	<0.001	0.0032	<0.001	NA	NA	NA	NA
MW-9	11/11/10	<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
MW-10	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	05/27/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	08/16/10	0.0011	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-10	11/11/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
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

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-	o-Xylene	Gasoline	Diesel	Oil	Total
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-11	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	05/27/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	08/16/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-11	11/11/10	<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
MW-12	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	05/27/10	0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-12	08/16/10	<0.001	<0.002	<0.001	<0.002	0.0017	NA	NA	NA	NA
MW-12	11/11/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
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

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-	o-Xylene	Gasoline	Diesel	Oil	Total
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-13	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	05/27/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	08/16/10	0.0014	<0.002	<0.001	<0.002	0.002	NA	NA	NA	NA
MW-13	11/11/10	<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
MW-14	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	05/27/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	08/16/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-14	11/11/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
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

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-	o-Xylene	Gasoline	Diesel	Oil	Total
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
MW-15	02/05/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	05/27/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	08/16/10	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-15	11/11/10	<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								
TMW-1	02/05/10	Not Sampled Due to the Presence of PSH								
TMW-1	05/27/10	Not Sampled Due to the Presence of PSH								
TMW-1	08/16/10	Not Sampled Due to the Presence of PSH								
TMW-1	11/11/10	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

APPENDIX C

Laboratory Data Sheets

Analytical Report 361467

for

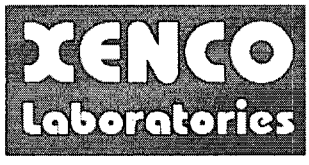
PLAINS ALL AMERICAN EH&S

Project Manager: Shawn Harris

Livingston Ridge

2001-11005

16-FEB-10



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-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 (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), 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-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL00449):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295)

16-FEB-10

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

Reference: XENCO Report No: **361467**
Livingston Ridge
Project Address:

Shawn Harris:

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 361467. 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. 361467 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 361467

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	Feb-05-10 13:30		361467-001
MW-6	W	Feb-05-10 13:45		361467-002
MW-9	W	Feb-05-10 14:00		361467-003
MW-2	W	Feb-05-10 14:15		361467-004
MW-8	W	Feb-05-10 14:30		361467-005
MW-4	W	Feb-05-10 14:45		361467-006
MW-5	W	Feb-05-10 15:00		361467-007
MW-7	W	Feb-05-10 15:15		361467-008
MW-3	W	Feb-05-10 15:30		361467-009
MW-10	W	Feb-05-10 15:45		361467-010
MW-12	W	Feb-05-10 16:15		361467-011
MW-13	W	Feb-05-10 16:30		361467-012
MW-11	W	Feb-05-10 16:45		361467-013
MW-14	W	Feb-05-10 17:00		361467-014
MW-15	W	Feb-05-10 17:15		361467-015

CASE NARRATIVE

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

Project ID:	*2001-11005*	*Report Date:*	*16-FEB-10*
Work Order Number:	*361467*	*Date Received:*	*02/08/2010*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-793525 BTEX by EPA 8021
SW8021BM

Batch 793525, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis
Samples affected are: 361467-006,361467-011.
4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis
Samples affected are: 361467-001.

Batch: LBA-793807 BTEX by EPA 8021
SW8021BM

Batch 793807, 1,4-Difluorobenzene recovered below QC limits Data confirmed by re-analysis. Samples affected are: 361467-001,361467-002. 1,4-Difluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 550347-1-BLK.

Certificate of Analysis Summary 361467

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Shawn Harris
Project Location:

Date Received in Lab: Mon Feb-08-10 11:25 am
Report Date: 16-FEB-10
Project Manager: Brent Barron, II

Analysis Requested	*Lab Id:*	361467-001		361467-002		361467-003		361467-004		361467-005		361467-006	
	Field Id:	MW-1		MW-6		MW-9		MW-2		MW-8		MW-4	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Feb-05-10 13:30		Feb-05-10 13:45		Feb-05-10 14:00		Feb-05-10 14:15		Feb-05-10 14:30		Feb-05-10 14:45	
BTEX by EPA 8021	*Extracted:*	Feb-10-10 09:00		Feb-15-10 08:00		Feb-10-10 09:00		Feb-10-10 09:00		Feb-10-10 09:00		Feb-10-10 09:00	
	Analyzed:	Feb-11-10 14:14		Feb-15-10 10:40		Feb-11-10 15:01		Feb-11-10 15:24		Feb-11-10 15:47		Feb-11-10 16:56	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		0.6889 D	0.0100	ND	0.0010	0.0016	0.0010	ND	0.0010	ND	0.0010	0.0198	0.0010
Toluene		0.0139	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		0.0796	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	0.0175	0.0010
m,p-Xylenes		0.0556	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene		0.0278	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Xylenes, Total		0.0834	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total BTEX		0.8658	0.0010	ND	0.0010	0.0016	0.0010	ND	0.0010	ND	0.0010	0.0373	0.0010

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 361467

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Shawn Harris
Project Location:

Date Received in Lab: Mon Feb-08-10 11:25 am
Report Date: 16-FEB-10
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	361467-007		361467-008		361467-009		361467-010		361467-011		361467-012	
	Field Id:	MW-5		MW-7		MW-3		MW-10		MW-12		MW-13	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Feb-05-10 15:00		Feb-05-10 15:15		Feb-05-10 15:30		Feb-05-10 15:45		Feb-05-10 16:15		Feb-05-10 16:30	
BTEX by EPA 8021	*Extracted:*	Feb-10-10 09:00		Feb-10-10 09:00		Feb-10-10 09:00		Feb-10-10 09:00		Feb-10-10 09:00		Feb-10-10 09:00	
	Analyzed:	Feb-11-10 20:23		Feb-11-10 17:19		Feb-11-10 17:42		Feb-11-10 18:05		Feb-11-10 18:28		Feb-11-10 18:52	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		0.7078	0.0050	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Toluene		ND	0.0100	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		0.4458	0.0050	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
m,p-Xylenes		0.4786	0.0100	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene		0.1105	0.0050	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Xylenes, Total		0.5891	0.0050	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Total BTEX		1.7427	0.0050	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010

Brent Barron, II
Odessa Laboratory Manager

Final Ver. 1.000

Certificate of Analysis Summary 361467

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Project Id: 2001-11005
Contact: Shawn Harris
Project Location:

Date Received in Lab: Mon Feb-08-10 11:25 am
Report Date: 16-FEB-10
Project Manager: Brent Barron, II

Analysis Requested											
	Lab Id:	361467-013		361467-014		361467-015					
	Field Id:	MW-11		MW-14		MW-15					
	Depth:										
	Matrix:	WATER		WATER		WATER					
	Sampled:	Feb-05-10 16:45		Feb-05-10 17:00		Feb-05-10 17:15					
BTEX by EPA 8021	*Extracted:*	Feb-10-10 09:00		Feb-10-10 09:00		Feb-10-10 09:00					
	Analyzed:	Feb-11-10 19:15		Feb-11-10 19:37		Feb-11-10 20:00					
	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

Final Ver. 1.000

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 : 361467, **Project ID:** 2001-11005

Lab Batch #: 793525 **Sample:** 550153-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 10:02

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 793525 **Sample:** 550153-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 10:25

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 793525 **Sample:** 550153-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 11:33

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 793525 **Sample:** 361467-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 14:14

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	0.0544	0.0300	181	80-120	**

Lab Batch #: 793525 **Sample:** 361467-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 15:01

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0317	0.0300	106	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 : 361467,

Project ID: 2001-11005

Lab Batch #: 793525 **Sample:** 361467-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 15:24

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	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	0.0331	0.0300	110	80-120	

Lab Batch #: 793525 **Sample:** 361467-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 15:47

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	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	0.0326	0.0300	109	80-120	

Lab Batch #: 793525 **Sample:** 361467-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 16:56

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0226	0.0300	75	80-120	*
4-Bromofluorobenzene	0.0254	0.0300	85	80-120	

Lab Batch #: 793525 **Sample:** 361467-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 17:19

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	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	0.0318	0.0300	106	80-120	

Lab Batch #: 793525 **Sample:** 361467-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 17:42

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	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	0.0319	0.0300	106	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 : 361467,

Project ID: 2001-11005

Lab Batch #: 793525 **Sample:** 361467-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 18:05

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 793525 **Sample:** 361467-011 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 18:28

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0216	0.0300	72	80-120	*
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

Lab Batch #: 793525 **Sample:** 361467-012 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 18:52

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0252	0.0300	84	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 793525 **Sample:** 361467-013 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 19:15

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 793525 **Sample:** 361467-014 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 19:37

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	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 : 361467, **Project ID:** 2001-11005

Lab Batch #: 793525 **Sample:** 361467-015 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 20:00

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	0.0333	0.0300	111	80-120	

Lab Batch #: 793525 **Sample:** 361467-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 20:23

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0257	0.0300	86	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 793525 **Sample:** 361467-015 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 20:46

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	
4-Bromofluorobenzene	0.0336	0.0300	112	80-120	

Lab Batch #: 793525 **Sample:** 361467-015 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/11/10 21:09

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

Lab Batch #: 793807 **Sample:** 550347-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/15/10 08:41

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	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 : 361467,

Project ID: 2001-11005

Lab Batch #: 793807 **Sample:** 550347-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/15/10 09:03

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	0.0312	0.0300	104	80-120	

Lab Batch #: 793807 **Sample:** 550347-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/15/10 10:11

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0231	0.0300	77	80-120	*
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 793807 **Sample:** 361467-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/15/10 10:40

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0230	0.0300	77	80-120	**
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 793807 **Sample:** 361470-009 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/15/10 13:20

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 793807 **Sample:** 361470-009 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/15/10 13:43

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	0.0319	0.0300	106	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 : 361467,

Project ID: 2001-11005

Lab Batch #: 793807 **Sample:** 361467-001 / DL **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/15/10 15:26

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0234	0.0300	78	80-120	**
4-Bromofluorobenzene	0.0279	0.0300	93	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 #: 361467 **Project ID:** 2001-11005

Analyst: ASA **Date Prepared:** 02/10/2010 **Date Analyzed:** 02/11/2010

Lab Batch ID: 793525 **Sample:** 550153-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

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	0.0998	100	0.1	0.1019	102	2	70-125	25	
Toluene	ND	0.1000	0.0982	98	0.1	0.1003	100	2	70-125	25	
Ethylbenzene	ND	0.1000	0.0989	99	0.1	0.1011	101	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.1969	98	0.2	0.2011	101	2	70-131	25	
o-Xylene	ND	0.1000	0.0985	99	0.1	0.1006	101	2	71-133	25	

Analyst: ASA **Date Prepared:** 02/15/2010 **Date Analyzed:** 02/15/2010

Lab Batch ID: 793807 **Sample:** 550347-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

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	0.0848	85	0.1	0.0883	88	4	70-125	25	
Toluene	ND	0.1000	0.0846	85	0.1	0.0886	89	5	70-125	25	
Ethylbenzene	ND	0.1000	0.0822	82	0.1	0.0864	86	5	71-129	25	
m,p-Xylenes	ND	0.2000	0.1692	85	0.2	0.1783	89	5	70-131	25	
o-Xylene	ND	0.1000	0.0880	88	0.1	0.0928	93	5	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 # : 361467 **Project ID:** 2001-11005

Lab Batch ID: 793525 **QC- Sample ID:** 361467-015 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 02/11/2010 **Date Prepared:** 02/10/2010 **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	ND	0.1000	0.1009	101	0.1000	0.1007	101	0	70-125	25	
Toluene	ND	0.1000	0.0969	97	0.1000	0.0974	97	1	70-125	25	
Ethylbenzene	ND	0.1000	0.0991	99	0.1000	0.0990	99	0	71-129	25	
m,p-Xylenes	ND	0.2000	0.1965	98	0.2000	0.1965	98	0	70-131	25	
o-Xylene	ND	0.1000	0.0988	99	0.1000	0.0985	99	0	71-133	25	

Lab Batch ID: 793807 **QC- Sample ID:** 361470-009 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 02/15/2010 **Date Prepared:** 02/15/2010 **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	ND	0.1000	0.0808	81	0.1000	0.0817	82	1	70-125	25	
Toluene	ND	0.1000	0.0814	81	0.1000	0.0822	82	1	70-125	25	
Ethylbenzene	0.0011	0.1000	0.0804	79	0.1000	0.0820	81	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.1621	81	0.2000	0.1661	83	2	70-131	25	
o-Xylene	ND	0.1000	0.0846	85	0.1000	0.0864	86	2	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: Ballott Bole

Laboratory: Xenco

Address:

Contact:

Phone:

PO/SO #:

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:

Proj. No.: A4077008

Project Name: Livingston Ridge

No/Type of Containers: 20 / VOA

ANALYSIS REQUESTED: BTEX

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	2.5.10	1330		✓	MW-1			2				2	361467-01
W	2.5.10	1345		✓	MW-6			2				2	-02
W	2.5.10	1400		✓	MW-9			2				2	-03
W	2.5.10	1415		✓	MW-2			2				2	-04
W	2.5.10	1430		✓	MW-8			2				2	-05
W	2.5.10	1445		✓	MW-4			2				2	-06
W	2.5.10	1500		✓	MW-5			2				2	-07
W	2.5.10	1515		✓	MW-7			2				2	-08
W	2.5.10	1530		✓	MW-3			2				2	-09
W	2.5.10	1545		✓	MW-10			2				2	-10

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	2.8.10	1125			
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) Andrea Fann	Date: 2.8.10	Time: 11:25

NOTES: Plains: Shawn Hallis

2001-11005

w/labels as 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) 268-8600 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, Tx

Project Manager: Bailey Bole

Laboratory: Xenco

Address:

Contact:

Phone:

PO/SO #:

Lab use only
Due Date:

Temp. of coolers when received (C°): 2.1

1 | 2 | 3 | 4 | 5

Page 2 of 2

Sampler's Name: Sean Hightower

Sampler's Signature: Sean Hightower

Proj. No.: A4077008

Project Name: Livingston Ridge

No/Type of Containers: 10/VOA

ANALYSIS REQUESTED: BTEX

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	2.5.10	1615		✓	MW-12			2				361467-11
W	2.5.10	1630		✓	MW-13			2				-12
W	2.5.10	1645		✓	MW-11			2				-13
W	2.5.10	1700		✓	MW-14			2				-14
W	2.5.10	1715		✓	MW-15			2				-15

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	2.8.10	1125			
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) Andrea Sam	Date: 2.8.10	Time: 11:25

NOTES: w/labels as 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
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8901 Carpenter Freeway, Suite 100
Dallas, Texas 75247
(214) 630-1010 Fax (214) 630-7070

Fort Worth Office
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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: Tevracon / Plains

Date/ Time: 2.8.10 11:25

Lab ID # : 361467

Initials: AL

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 374793

for

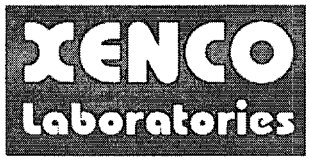
PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Livingston Ridge

2001-11005

09-JUN-10



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-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 (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), 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-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL00449):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295)

09-JUN-10

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

Reference: XENCO Report No: **374793**
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 374793. 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. 374793 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 374793

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-6	W	May-27-10 14:25		374793-001
MW-9	W	May-27-10 14:10		374793-002
MW-10	W	May-27-10 13:45		374793-003
MW-4	W	May-27-10 15:00		374793-004
MW-12	W	May-27-10 15:45		374793-005
MW-13	W	May-27-10 16:00		374793-006
MW-11	W	May-27-10 16:20		374793-007
MW-14	W	May-27-10 16:30		374793-008
MW-15	W	May-27-10 16:45		374793-009

CASE NARRATIVE

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

Project ID: 2001-11005
Work Order Number: 374793

Report Date: 09-JUN-10
Date Received: 05/28/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-809667 BTEX by EPA 8021
SW8021BM

Batch 809667, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis
Samples affected are: 374793-007.

Batch: LBA-809918 BTEX by EPA 8021
SW8021BM

Batch 809918, 4-Bromofluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis
Samples affected are: 374793-004,374793-003.

Certificate of Analysis Summary 374793

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

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

Date Received in Lab: Fri May-28-10 08:52 am
Report Date: 09-JUN-10
Project Manager: Brent Barron, II

Analysis Requested	*Lab Id:*	374793-001		374793-002		374793-003		374793-004		374793-005		374793-006	
	Field Id:	MW-6		MW-9		MW-10		MW-4		MW-12		MW-13	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	May-27-10 14:25		May-27-10 14:10		May-27-10 13:45		May-27-10 15:00		May-27-10 15:45		May-27-10 16:00	
BTEX by EPA 8021	*Extracted:*	Jun-09-10 06:45		Jun-09-10 06:45		Jun-09-10 06:45		Jun-09-10 06:45		Jun-09-10 06:45		Jun-09-10 06:45	
	Analyzed:	Jun-09-10 08:53		Jun-09-10 09:15		Jun-09-10 09:38		Jun-09-10 10:00		Jun-09-10 10:22		Jun-09-10 10:44	
	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	0.0787	0.0010	0.0010	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	0.0595	0.0010	ND	0.0010	ND	0.0010
m,p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	0.0083	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
Xylenes, Total		ND	0.0010	ND	0.0010	ND	0.0010	0.0083	0.0010	ND	0.0010	ND	0.0010
Total BTEX		ND	0.0010	ND	0.0010	ND	0.0010	0.1465	0.0010	0.0010	0.0010	ND	0.0010

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 374793

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

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

Date Received in Lab: Fri May-28-10 08:52 am
Report Date: 09-JUN-10
Project Manager: Brent Barron, II

Analysis Requested											
	Lab Id:	374793-007		374793-008		374793-009					
	Field Id:	MW-11		MW-14		MW-15					
	Depth:										
	Matrix:	WATER		WATER		WATER					
	Sampled:	May-27-10 16:20		May-27-10 16:30		May-27-10 16:45					
BTEX by EPA 8021	***Extracted:***	Jun-07-10 12:13		Jun-07-10 12:13		Jun-07-10 12:13					
	Analyzed:	Jun-08-10 01:27		Jun-08-10 01:49		Jun-08-10 02:12					
	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 : 374793,

Project ID: 2001-11005

Lab Batch #: 809667 **Sample:** 565158-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/07/10 17:58

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 809667 **Sample:** 565158-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/07/10 18:20

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0327	0.0300	109	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 809667 **Sample:** 565158-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/07/10 19:27

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0241	0.0300	80	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 809667 **Sample:** 374793-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/08/10 01:27

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0231	0.0300	77	80-120	*
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 809667 **Sample:** 374793-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/08/10 01:49

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0241	0.0300	80	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	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 : 374793,

Project ID: 2001-11005

Lab Batch #: 809667 **Sample:** 374793-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/08/10 02:12

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0243	0.0300	81	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 809667 **Sample:** 374793-009 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/08/10 04:04

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 809667 **Sample:** 374793-009 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/08/10 04:27

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 809918 **Sample:** 565281-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/10 06:58

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 809918 **Sample:** 565281-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/10 07:21

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	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 : 374793, **Project ID:** 2001-11005

Lab Batch #: 809918 **Sample:** 565281-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/10 08:28

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	0.0262	0.0300	87	80-120	

Lab Batch #: 809918 **Sample:** 374793-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/10 08:53

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0252	0.0300	84	80-120	

Lab Batch #: 809918 **Sample:** 374793-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/10 09:15

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 809918 **Sample:** 374793-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/10 09:38

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0257	0.0300	86	80-120	
4-Bromofluorobenzene	0.0218	0.0300	73	80-120	**

Lab Batch #: 809918 **Sample:** 374793-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/10 10:00

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0231	0.0300	77	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 : 374793,

Project ID: 2001-11005

Lab Batch #: 809918 **Sample:** 374793-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/10 10:22

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 809918 **Sample:** 374793-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/10 10:44

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 809918 **Sample:** 374793-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/10 12:36

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 809918 **Sample:** 374793-001 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 06/09/10 12:58

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	0.0287	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

Work Order #: 374793 **Project ID:** 2001-11005

Analyst: ASA **Date Prepared:** 06/07/2010 **Date Analyzed:** 06/07/2010

Lab Batch ID: 809667 **Sample:** 565158-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

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	0.1053	105	0.1	0.1110	111	5	70-125	25	
Toluene	ND	0.1000	0.1042	104	0.1	0.1094	109	5	70-125	25	
Ethylbenzene	ND	0.1000	0.1057	106	0.1	0.1108	111	5	71-129	25	
m,p-Xylenes	ND	0.2000	0.2115	106	0.2	0.2221	111	5	70-131	25	
o-Xylene	ND	0.1000	0.1039	104	0.1	0.1090	109	5	71-133	25	

Analyst: ASA **Date Prepared:** 06/09/2010 **Date Analyzed:** 06/09/2010

Lab Batch ID: 809918 **Sample:** 565281-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

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	0.0860	86	0.1	0.0804	80	7	70-125	25	
Toluene	ND	0.1000	0.0932	93	0.1	0.0865	87	7	70-125	25	
Ethylbenzene	ND	0.1000	0.0910	91	0.1	0.0851	85	7	71-129	25	
m,p-Xylenes	ND	0.2000	0.1988	99	0.2	0.1820	91	9	70-131	25	
o-Xylene	ND	0.1000	0.0980	98	0.1	0.0903	90	8	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 # : 374793 **Project ID:** 2001-11005

Lab Batch ID: 809667 **QC- Sample ID:** 374793-009 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 06/08/2010 **Date Prepared:** 06/07/2010 **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	ND	0.1000	0.0947	95	0.1000	0.0915	92	3	70-125	25	
Toluene	ND	0.1000	0.0940	94	0.1000	0.0915	92	3	70-125	25	
Ethylbenzene	ND	0.1000	0.0936	94	0.1000	0.0903	90	4	71-129	25	
m,p-Xylenes	ND	0.2000	0.1878	94	0.2000	0.1802	90	4	70-131	25	
o-Xylene	ND	0.1000	0.0923	92	0.1000	0.0890	89	4	71-133	25	

Lab Batch ID: 809918 **QC- Sample ID:** 374793-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 06/09/2010 **Date Prepared:** 06/09/2010 **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	ND	0.1000	0.0872	87	0.1000	0.0842	84	4	70-125	25	
Toluene	ND	0.1000	0.0976	98	0.1000	0.0941	94	4	70-125	25	
Ethylbenzene	ND	0.1000	0.0939	94	0.1000	0.0893	89	5	71-129	25	
m,p-Xylenes	ND	0.2000	0.2029	101	0.2000	0.1949	97	4	70-131	25	
o-Xylene	ND	0.1000	0.1020	102	0.1000	0.0971	97	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

ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

Terracon
Consulting Engineers & Scientists

Office Location: Midland, Tx

Project Manager: Barrett Bole

Laboratory: Xenco

Address:

Contact:

Phone:

PO/SO #:

Sampler's Name: Sean Hightower

Sampler's Signature:

Proj. No.: A40277008

Project Name: Livingston Ridge

No/Type of Containers: 18/VOA

ANALYSIS REQUESTED: BTEX

Lab use only
Due Date:

Temp. of coolers when received (C°): 6.0

1 | 2 | 3 | 4 | 5

Page 1 of

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	5-27-10	1425		✓	MW-6			2				374793-01
W	5-27-10	1410		✓	MW-9			2				02
W	5-27-10	1345		✓	MW-10			2				03
W	5-27-10	1500		✓	MW-4			2				04
W	5-27-10	1545		✓	MW-12			2				05
W	5-27-10	1600		✓	MW-13			2				06
W	5-27-10	1620		✓	MW-11			2				07
W	5-27-10	1630		✓	MW-14			2				08
W	5-27-10	1645		✓	MW-15			2				09

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	5/28/10	08:52			
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: 5/28/10	Time: 08:52

NOTES: ~~Barrett Bole~~ bwbole@terracon.com

Plains Jason Henry

2001-11005

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

XENCO Laboratories	Document Title: Sample Receipt Checklist
XENCO Laboratories Atlanta, Corpus Christi, Dallas, Houston, Miami, Midland, Philadelphia, San Antonio, Tampa	Document No.: SYS - SRC Revision/Date : No.00 , 05/18/10 Effective Date: 05/20/10 Page No.: 1 of 1

Prelogin / Nonconformance Report – Sample Log-In

Client: Tetra Tech / Plains

Date/Time: 5.28.10 8:52

Lab ID #: 374793

Initials: BB / AL

Sample Receipt Checklist

1. Sample on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	(Yes)	No	N/A	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	Yes	(No)		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample lable(s)?	(Yes)	No		
9. Container labels legible legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	No	(N/A)	
17. Voc sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	6.0 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact: S. Hightower Contacted by: A. Law Date/Time: 5.28.10 / 13:15

Regarding: client needs BTEX 8021B for all 9 samples.

Corrective Action Taken:

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 386037

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Livingston Ridge

2001-11005

26-AUG-10

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-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 (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), 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-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL00449):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

26-AUG-10

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

Reference: XENCO Report No: **386037**
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 386037. 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. 386037 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 386037

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-4	W	Aug-16-10 12:30		386037-001
MW-6	W	Aug-16-10 12:45		386037-002
MW-9	W	Aug-16-10 13:00		386037-003
MW-10	W	Aug-16-10 13:20		386037-004
MW-11	W	Aug-16-10 14:15		386037-005
MW-12	W	Aug-16-10 13:40		386037-006
MW-13	W	Aug-16-10 13:55		386037-007
MW-14	W	Aug-16-10 14:30		386037-008
MW-15	W	Aug-16-10 15:00		386037-009

CASE NARRATIVE

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

Project ID:	*2001-11005*	*Report Date:*	*26-AUG-10*
Work Order Number:	*386037*	*Date Received:*	*08/17/2010*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-820031 BTEX by EPA 8021
None

Batch: LBA-820334 BTEX by EPA 8021
None

Certificate of Analysis Summary 386037

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

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

Date Received in Lab: Tue Aug-17-10 04:10 pm
Report Date: 26-AUG-10
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	386037-001		386037-002		386037-003		386037-004		386037-005		386037-006	
	Field Id:	MW-4		MW-6		MW-9		MW-10		MW-11		MW-12	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Aug-16-10 12:30		Aug-16-10 12:45		Aug-16-10 13:00		Aug-16-10 13:20		Aug-16-10 14:15		Aug-16-10 13:40	
BTEX by EPA 8021	*Extracted:*	Aug-20-10 09:00		Aug-20-10 09:00		Aug-20-10 09:00		Aug-20-10 09:00		Aug-20-10 09:00		Aug-25-10 09:00	
	Analyzed:	Aug-20-10 22:03		Aug-20-10 16:51		Aug-20-10 17:36		Aug-20-10 17:58		Aug-20-10 18:20		Aug-25-10 11:57	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		0.2080	0.0500	ND	0.0010	ND	0.0010	0.0011	0.0010	ND	0.0010	ND	0.0010
Toluene		ND	0.1000	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		0.1350	0.0500	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
m,p-Xylenes		ND	0.1000	ND	0.0020	0.0032	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene		ND	0.0500	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	0.0017	0.0010
Xylenes, Total		ND	0.0500	ND	0.0010	0.0032	0.0010	ND	0.0010	ND	0.0010	0.0017	0.0010
Total BTEX		0.3430	0.0500	ND	0.0010	0.0032	0.0010	0.0011	0.0010	ND	0.0010	0.0017	0.0010

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

Certificate of Analysis Summary 386037

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

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

Date Received in Lab: Tue Aug-17-10 04:10 pm
Report Date: 26-AUG-10
Project Manager: Brent Barron, II

Analysis Requested											
	Lab Id:	386037-007		386037-008		386037-009					
	Field Id:	MW-13		MW-14		MW-15					
	Depth:										
	Matrix:	WATER		WATER		WATER					
	Sampled:	Aug-16-10 13:55		Aug-16-10 14:30		Aug-16-10 15:00					
BTEX by EPA 8021	*Extracted:*	Aug-20-10 09:00		Aug-20-10 09:00		Aug-20-10 09:00					
	Analyzed:	Aug-20-10 18:43		Aug-20-10 20:34		Aug-20-10 20:56					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Benzene		0.0014	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		0.0020	0.0010	ND	0.0010	ND	0.0010				
Xylenes, Total		0.0020	0.0010	ND	0.0010	ND	0.0010				
Total BTEX		0.0034	0.0010	ND	0.0010	ND	0.0010				

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

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

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 386037, **Project ID:** 2001-11005

Lab Batch #: 820031 **Sample:** 571286-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/20/10 11:40

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

Lab Batch #: 820031 **Sample:** 571286-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/20/10 12:03

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

Lab Batch #: 820031 **Sample:** 571286-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/20/10 12:25

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 820031 **Sample:** 386035-002 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/20/10 13:09

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 820031 **Sample:** 386035-002 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/20/10 13:31

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	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 : 386037,

Project ID: 2001-11005

Lab Batch #: 820031 **Sample:** 386037-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/20/10 16:51

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

Lab Batch #: 820031 **Sample:** 386037-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/20/10 17:36

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

Lab Batch #: 820031 **Sample:** 386037-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/20/10 17:58

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	0.0271	0.0300	90	80-120	

Lab Batch #: 820031 **Sample:** 386037-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/20/10 18:20

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 820031 **Sample:** 386037-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/20/10 18:43

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	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 : 386037,

Project ID: 2001-11005

Lab Batch #: 820031 **Sample:** 386037-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/20/10 20:34

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	0.0280	0.0300	93	80-120	

Lab Batch #: 820031 **Sample:** 386037-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/20/10 20:56

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 820031 **Sample:** 386037-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/20/10 22:03

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

Lab Batch #: 820334 **Sample:** 571460-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/25/10 10:05

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 820334 **Sample:** 571460-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/25/10 10:27

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	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 : 386037,

Project ID: 2001-11005

Lab Batch #: 820334 **Sample:** 571460-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/25/10 11:12

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 820334 **Sample:** 386037-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/25/10 11:57

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 820334 **Sample:** 386037-006 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/25/10 12:19

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 820334 **Sample:** 386037-006 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 08/25/10 12:41

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	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 #: 386037 **Project ID:** 2001-11005

Analyst: ASA **Date Prepared:** 08/20/2010 **Date Analyzed:** 08/20/2010

Lab Batch ID: 820031 **Sample:** 571286-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

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	0.1056	106	0.1	0.1076	108	2	70-125	25	
Toluene	ND	0.1000	0.1045	105	0.1	0.1075	108	3	70-125	25	
Ethylbenzene	ND	0.1000	0.1146	115	0.1	0.1140	114	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.2260	113	0.2	0.2314	116	2	70-131	25	
o-Xylene	ND	0.1000	0.1115	112	0.1	0.1141	114	2	71-133	25	

Analyst: ASA **Date Prepared:** 08/25/2010 **Date Analyzed:** 08/25/2010

Lab Batch ID: 820334 **Sample:** 571460-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

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	0.1057	106	0.1	0.1101	110	4	70-125	25	
Toluene	ND	0.1000	0.1045	105	0.1	0.1088	109	4	70-125	25	
Ethylbenzene	ND	0.1000	0.1137	114	0.1	0.1171	117	3	71-129	25	
m,p-Xylenes	ND	0.2000	0.2256	113	0.2	0.2337	117	4	70-131	25	
o-Xylene	ND	0.1000	0.1086	109	0.1	0.1136	114	5	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

Final 1.000

Form 3 - MS / MSD Recoveries

Project Name: Livingston Ridge

Work Order # : 386037 **Project ID:** 2001-11005

Lab Batch ID: 820031 **QC- Sample ID:** 386035-002 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 08/20/2010 **Date Prepared:** 08/20/2010 **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	ND	0.1000	0.0988	99	0.1000	0.0974	97	1	70-125	25	
Toluene	ND	0.1000	0.0973	97	0.1000	0.0965	97	1	70-125	25	
Ethylbenzene	ND	0.1000	0.1058	106	0.1000	0.1049	105	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.2092	105	0.2000	0.2061	103	1	70-131	25	
o-Xylene	ND	0.1000	0.1047	105	0.1000	0.1025	103	2	71-133	25	

Lab Batch ID: 820334 **QC- Sample ID:** 386037-006 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 08/25/2010 **Date Prepared:** 08/25/2010 **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	ND	0.1000	0.1009	101	0.1000	0.1061	106	5	70-125	25	
Toluene	ND	0.1000	0.0998	100	0.1000	0.1037	104	4	70-125	25	
Ethylbenzene	ND	0.1000	0.1084	108	0.1000	0.1142	114	5	71-129	25	
m,p-Xylenes	ND	0.2000	0.2141	107	0.2000	0.2271	114	6	70-131	25	
o-Xylene	0.0017	0.1000	0.1089	107	0.1000	0.1137	112	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, Tx

Project Manager Barrett Bole

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

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

Sampler's Name: Sean Hightower
Sampler's Signature:

Proj. No.: A4077008
Project Name: Livingston Ridge
No/Type of Containers: 18/VOA

ANALYSIS REQUESTED: BTEX (8021B)

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O ice		Lab Sample ID (Lab Use Only)
✓	8-16-10	1230		✓	MW-4			2			HCl	2	386037-001
✓	8-16-10	1245		✓	MW-6			2				2	2
✓	8-16-10	1300		✓	MW-9			2				2	3
✓	8-16-10	1320		✓	MW-10			2				2	4
✓	8-16-10	1415		✓	MW-11			2				2	5
✓	8-16-10	1340		✓	MW-12			2				2	6
✓	8-16-10	1355		✓	MW-13			2				2	7
✓	8-16-10	1430		✓	MW-14			2				2	8
✓	8-16-10	1500		✓	MW-15			2			↓	2	9

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	8-16-10	1515		8/16/10	4:05
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
				8/17/10	1515
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	8/17/10	16:10		8/17/10	4:10
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES: Blaine: Jason Henry
labels/ss seal 2001-11005
no seal on cooler
bwbole@terracon.com
5.1

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
Port Worth Office: 2601 Gravel Drive, Port 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

XENCO Laboratories	Document Title: Sample Receipt Checklist
Atlanta, Boca Raton, Corpus Christi, Dallas	Document No.: SYS-SRC
Houston, Miami, Odessa, Philadelphia	Revision/Date: No. 01, 5/27/2010
Phoenix, San Antonio, Tampa	Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains / Terracon

Date/Time: 8/17/10 16:10

Lab ID # : 386037

Initials: TB

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	(Yes)	No	N/A	labels as seals
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	(No)	N/A	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 5.1 °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

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

Regarding: _____

_____

Corrective Action Taken: _____

_____

_____

_____

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.

☐ Initial and Backup Temperature confirm out of temperature conditions

☐ Client understands and would like to proceed with analysis

Analytical Report 397099

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Livingston Ridge

2001-11005

16-NOV-10

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-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 (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), 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-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

16-NOV-10

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

Reference: XENCO Report No: **397099**
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 397099. 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. 397099 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 397099

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-2	W	Nov-11-10 12:36		397099-001
MW-4	W	Nov-11-10 15:12		397099-002
MW-5	W	Nov-11-10 15:25		397099-003
MW-6	W	Nov-11-10 13:03		397099-004
MW-7	W	Nov-11-10 12:09		397099-005
MW-8	W	Nov-11-10 14:53		397099-006
MW-9	W	Nov-11-10 13:29		397099-007
MW-10	W	Nov-11-10 11:52		397099-008
MW-11	W	Nov-11-10 16:21		397099-009
MW-12	W	Nov-11-10 16:07		397099-010
MW-13	W	Nov-11-10 15:53		397099-011
MW-14	W	Nov-11-10 16:54		397099-012
MW-15	W	Nov-11-10 16:43		397099-013

CASE NARRATIVE

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

Project ID: 2001-11005 *Report Date:* 16-NOV-10
Work Order Number: 397099 *Date Received:* 11/12/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-831961 BTEX by EPA 8021B

Batch: LBA-832002 BTEX by EPA 8021B
SW8021BM

Batch 832002, Toluene recovered above QC limits in the laboratory control sample, however the laboratory control sample duplicate and MS/MSD are within the QC limits.
Samples affected are: 397099-005, -001.

Toluene was detected in the blk, however the affected sample is ND for toluene therefore data is reported as is.

Batch: LBA-832098 BTEX by EPA 8021B

Certificate of Analysis Summary 397099

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

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

Date Received in Lab: Fri Nov-12-10 12:14 pm
Report Date: 16-NOV-10
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	397099-001		397099-002		397099-003		397099-004		397099-005		397099-006	
	Field Id:	MW-2		MW-4		MW-5		MW-6		MW-7		MW-8	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Nov-11-10 12:36		Nov-11-10 15:12		Nov-11-10 15:25		Nov-11-10 13:03		Nov-11-10 12:09		Nov-11-10 14:53	
BTEX by EPA 8021B	*Extracted:*	Nov-12-10 15:00		Nov-15-10 16:36		Nov-15-10 16:36		Nov-12-10 14:15		Nov-12-10 15:00		Nov-12-10 15:15	
	Analyzed:	Nov-13-10 11:22		Nov-15-10 23:21		Nov-16-10 05:22		Nov-13-10 00:45		Nov-13-10 11:45		Nov-13-10 17:47	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.0010	0.0335	0.0010	0.2260	0.0050	ND	0.0010	ND	0.0010	ND	0.0010
Toluene		ND	0.0020	ND	0.0020	ND	0.0100	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		ND	0.0010	0.0196	0.0010	0.2402	0.0050	ND	0.0010	ND	0.0010	ND	0.0010
m_p-Xylenes		ND	0.0020	0.0029	0.0020	0.1393	0.0100	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene		ND	0.0010	ND	0.0010	0.1087	0.0050	ND	0.0010	ND	0.0010	ND	0.0010
Total Xylenes		ND	0.0010	0.0029	0.0010	0.2480	0.0050	ND	0.0010	ND	0.0010	ND	0.0010
Total BTEX		ND	0.0010	0.0560	0.0010	0.7142	0.0050	ND	0.0010	ND	0.0010	ND	0.0010

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

Certificate of Analysis Summary 397099

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

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

Date Received in Lab: Fri Nov-12-10 12:14 pm
Report Date: 16-NOV-10
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	397099-007		397099-008		397099-009		397099-010		397099-011		397099-012	
	Field Id:	MW-9		MW-10		MW-11		MW-12		MW-13		MW-14	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Nov-11-10 13:29		Nov-11-10 11:52		Nov-11-10 16:21		Nov-11-10 16:07		Nov-11-10 15:53		Nov-11-10 16:54	
BTEX by EPA 8021B	*Extracted:*	Nov-12-10 15:15		Nov-12-10 15:15		Nov-12-10 15:15		Nov-12-10 15:15		Nov-12-10 15:15		Nov-12-10 15:15	
	Analyzed:	Nov-13-10 18:09		Nov-13-10 18:30		Nov-13-10 15:37		Nov-13-10 18:52		Nov-13-10 15:59		Nov-13-10 19:13	
	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, II
Odessa Laboratory Manager

Certificate of Analysis Summary 397099

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

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

Date Received in Lab: Fri Nov-12-10 12:14 pm
Report Date: 16-NOV-10
Project Manager: Brent Barron, II

Analysis Requested							
	Lab Id:	397099-013					
	Field Id:	MW-15					
	Depth:						
	Matrix:	WATER					
	Sampled:	Nov-11-10 16:43					
BTEX by EPA 8021B	*Extracted:*	Nov-12-10 15:15					
	Analyzed:	Nov-13-10 19:34					
	Units/RL:	mg/L RL					
Benzene		ND 0.0010					
Toluene		ND 0.0020					
Ethylbenzene		ND 0.0010					
m_p-Xylenes		ND 0.0020					
o-Xylene		ND 0.0010					
Total Xylenes		ND 0.0010					
Total BTEX		ND 0.0010					

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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

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge

Work Orders : 397099, **Project ID:** 2001-11005

Lab Batch #: 831961 **Sample:** 578720-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/12/10 23:19

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	0.0338	0.0300	113	80-120	

Lab Batch #: 831961 **Sample:** 578720-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/12/10 23:41

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 831961 **Sample:** 578720-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 00:23

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

Lab Batch #: 831961 **Sample:** 397099-004 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 00:45

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	0.0326	0.0300	109	80-120	

Lab Batch #: 831961 **Sample:** 397099-004 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 01:06

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	0.0303	0.0300	101	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 : 397099, **Project ID:** 2001-11005

Lab Batch #: 831961 **Sample:** 397099-004 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 01:27

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0317	0.0300	106	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

Lab Batch #: 831978 **Sample:** 578732-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 10:37

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 831978 **Sample:** 578732-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 10:58

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

Lab Batch #: 831978 **Sample:** 578732-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 11:41

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0252	0.0300	84	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 831978 **Sample:** 397102-002 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 12:24

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0355	0.0300	118	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	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 : 397099, **Project ID:** 2001-11005

Lab Batch #: 831978 **Sample:** 397102-002 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 12:45

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0357	0.0300	119	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 831978 **Sample:** 397099-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 15:37

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

Lab Batch #: 831978 **Sample:** 397099-011 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 15:59

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	0.0328	0.0300	109	80-120	

Lab Batch #: 831978 **Sample:** 397099-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 17:47

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0252	0.0300	84	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 831978 **Sample:** 397099-007 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 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	0.0246	0.0300	82	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	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 : 397099,

Project ID: 2001-11005

Lab Batch #: 831978 **Sample:** 397099-008 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 18:30

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0241	0.0300	80	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 831978 **Sample:** 397099-010 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 18:52

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0324	0.0300	108	80-120	

Lab Batch #: 831978 **Sample:** 397099-012 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 19:13

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0350	0.0300	117	80-120	

Lab Batch #: 831978 **Sample:** 397099-013 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 19:34

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	0.0332	0.0300	111	80-120	

Lab Batch #: 832002 **Sample:** 578743-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 02:06

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	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 : 397099, **Project ID:** 2001-11005

Lab Batch #: 832002 **Sample:** 578743-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 02:29

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 832002 **Sample:** 578743-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 03:36

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 832002 **Sample:** 397093-005 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 04:22

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0351	0.0300	117	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 832002 **Sample:** 397093-005 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 04:44

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 832002 **Sample:** 397099-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 11:22

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	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 : 397099, **Project ID:** 2001-11005

Lab Batch #: 832002 **Sample:** 397099-005 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/13/10 11:45

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 832098 **Sample:** 397099-002 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/10 00:04

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	0.0240	0.0300	80	80-120	

Lab Batch #: 832098 **Sample:** 578788-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/10 21:55

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0320	0.0300	107	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 832098 **Sample:** 578788-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/10 22:17

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 832098 **Sample:** 578788-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/10 22:59

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	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 : 397099,

Project ID: 2001-11005

Lab Batch #: 832098 **Sample:** 397099-002 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/10 23:21

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 832098 **Sample:** 397099-002 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/15/10 23:42

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0239	0.0300	80	80-120	

Lab Batch #: 832098 **Sample:** 397099-003 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 11/16/10 05:22

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0284	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.

BS / BSD Recoveries

Project Name: Livingston Ridge

Work Order #: 397099 **Project ID:** 2001-11005

Analyst: ASA **Date Prepared:** 11/12/2010 **Date Analyzed:** 11/12/2010

Lab Batch ID: 831961 **Sample:** 578720-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
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	0.1114	111	0.1	0.0980	98	13	70-125	25	
Toluene	ND	0.1000	0.1095	110	0.1	0.0955	96	14	70-125	25	
Ethylbenzene	ND	0.1000	0.1114	111	0.1	0.0962	96	15	71-129	25	
m_p-Xylenes	ND	0.2000	0.2279	114	0.2	0.1967	98	15	70-131	25	
o-Xylene	ND	0.1000	0.1121	112	0.1	0.0971	97	14	71-133	25	

Analyst: ASA **Date Prepared:** 11/12/2010 **Date Analyzed:** 11/13/2010

Lab Batch ID: 831978 **Sample:** 578732-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
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	0.0973	97	0.1	0.1055	106	8	70-125	25	
Toluene	ND	0.1000	0.0947	95	0.1	0.1021	102	8	70-125	25	
Ethylbenzene	ND	0.1000	0.0953	95	0.1	0.1037	104	8	71-129	25	
m_p-Xylenes	ND	0.2000	0.1901	95	0.2	0.2093	105	10	70-131	25	
o-Xylene	ND	0.1000	0.0912	91	0.1	0.0988	99	8	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

Final 1.000

BS / BSD Recoveries

Project Name: Livingston Ridge

Work Order #: 397099 **Project ID:** 2001-11005

Analyst: ASA **Date Prepared:** 11/12/2010 **Date Analyzed:** 11/13/2010

Lab Batch ID: 832002 **Sample:** 578743-1-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	0.1108	111	0.1	0.1071	107	3	70-125	25	
Toluene	0.0027	0.1000	0.1351	135	0.1	0.1187	119	13	70-125	25	H
Ethylbenzene	ND	0.1000	0.0966	97	0.1	0.0959	96	1	71-129	25	
m_p-Xylenes	ND	0.2000	0.1995	100	0.2	0.1943	97	3	70-131	25	
o-Xylene	ND	0.1000	0.0947	95	0.1	0.0950	95	0	71-133	25	

Analyst: ASA **Date Prepared:** 11/15/2010 **Date Analyzed:** 11/15/2010

Lab Batch ID: 832098 **Sample:** 578788-1-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	0.1002	100	0.1	0.0919	92	9	70-125	25	
Toluene	ND	0.1000	0.0973	97	0.1	0.0901	90	8	70-125	25	
Ethylbenzene	ND	0.1000	0.0982	98	0.1	0.0908	91	8	71-129	25	
m_p-Xylenes	ND	0.2000	0.2015	101	0.2	0.1891	95	6	70-131	25	
o-Xylene	ND	0.1000	0.0996	100	0.1	0.0948	95	5	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 # : 397099 **Project ID:** 2001-11005

Lab Batch ID: 831961 **QC- Sample ID:** 397099-004 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/13/2010 **Date Prepared:** 11/12/2010 **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	0.1002	100	0.1000	0.1062	106	6	70-125	25	
Toluene	ND	0.1000	0.0983	98	0.1000	0.1042	104	6	70-125	25	
Ethylbenzene	ND	0.1000	0.0993	99	0.1000	0.1056	106	6	71-129	25	
m_p-Xylenes	ND	0.2000	0.2048	102	0.2000	0.2178	109	6	70-131	25	
o-Xylene	ND	0.1000	0.1007	101	0.1000	0.1072	107	6	71-133	25	

Lab Batch ID: 831978 **QC- Sample ID:** 397102-002 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/13/2010 **Date Prepared:** 11/12/2010 **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	0.1094	109	0.1000	0.1067	107	2	70-125	25	
Toluene	ND	0.1000	0.1067	107	0.1000	0.1041	104	2	70-125	25	
Ethylbenzene	ND	0.1000	0.1082	108	0.1000	0.1052	105	3	71-129	25	
m_p-Xylenes	ND	0.2000	0.2222	111	0.2000	0.2176	109	2	70-131	25	
o-Xylene	ND	0.1000	0.1096	110	0.1000	0.1066	107	3	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 # : 397099 **Project ID:** 2001-11005

Lab Batch ID: 832002 **QC- Sample ID:** 397093-005 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/13/2010 **Date Prepared:** 11/12/2010 **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	0.0046	0.1000	0.1081	104	0.1000	0.1009	96	7	70-125	25	
Toluene	0.0203	0.1000	0.1151	95	0.1000	0.1091	89	5	70-125	25	
Ethylbenzene	0.0042	0.1000	0.0960	92	0.1000	0.0857	82	11	71-129	25	
m_p-Xylenes	0.0116	0.2000	0.1924	90	0.2000	0.1729	81	11	70-131	25	
o-Xylene	0.0055	0.1000	0.0921	87	0.1000	0.0832	78	10	71-133	25	

Lab Batch ID: 832098 **QC- Sample ID:** 397099-002 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/15/2010 **Date Prepared:** 11/15/2010 **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	0.0335	0.1000	0.1051	72	0.1000	0.1107	77	5	70-125	25	
Toluene	ND	0.1000	0.0729	73	0.1000	0.0768	77	5	70-125	25	
Ethylbenzene	0.0196	0.1000	0.0910	71	0.1000	0.0953	76	5	71-129	25	
m_p-Xylenes	0.0029	0.2000	0.1525	75	0.2000	0.1597	78	5	70-131	25	
o-Xylene	ND	0.1000	0.0740	74	0.1000	0.0769	77	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: BARRETT BALE

Laboratory: XENCO

Address:

Contact:

Phone:

PO/SO #:

Sampler's Name: JOSH WOODALL

Sampler's Signature:

Proj. No.: A407008

Project Name: LIVINGSTON RIDGE

No/Type of Containers

ANALYSIS REQUESTED: BTEX (8021-B)

Lab use only
Due Date:
VCT
Temp. of coolers when received (C°): 1.6
1 | 2 | 3 | 4 | 5

Page ____ of ____

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	11/1/10	1236		X	MW-3			2				X 397099
		1512			MW-4							
		1525			MW-5							
		1303			MW-6							
		1209			MW-7							
		1453			MW-8							
		1329			MW-9							
		1152			MW-10							
		1621			MW-11							
		1607			MW-12							

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	11/2/10	1214		11-2-10	1214
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:	Time:

NOTES:

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 ____

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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: BARRETT BOLE

Laboratory: XENCO

Address:

Contact:

Phone:

PO/SO #:

Sampler's Name: JOSH WOODALL

Sampler's Signature:

Proj. No.: 147077008

Project Name: LIVINGSTON RIDGE

No/Type of Containers

ANALYSIS REQUESTED: BTEX

Lab use only
Due Date:

Temp. of coolers when received (C°): 1.6

1	2	3	4	5

Page ____ of ____

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	11/11/10	1553		X	MW-13			2				397099
W	11/11/10	1654		X	MW-14			2				397099
W	11/11/10	1643		X	MW-15			2				397099

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	11/12/10	1214		11-12-10	12:14
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:	Time:

NOTES:

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 ____

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Austin, Texas 78735
(512) 442-1122 Fax (512) 442-1181

Midland Office
24 Smith Rd., # 261
Midland, Texas 79705
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XENCO Laboratories	Document Title: Sample Receipt Checklist
Atlanta, Boca Raton, Corpus Christi, Dallas	Document No.: SYS-SRC
Houston, Miami, Odessa, Philadelphia	Revision/Date: No. 01, 5/27/2010
Phoenix, San Antonio, Tampa	Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Terracon

Date/Time: 11-12-10 12:14

Lab ID # : 397099

Initials: KM

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	(N/A)	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	(No)	N/A	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 1.6 °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

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

Regarding: _____

_____

Corrective Action Taken: _____

_____

_____

_____

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.

☐ Initial and Backup Temperature confirm out of temperature conditions

☐ Client understands and would like to proceed with analysis

APPENDIX D

Historical Gauging Data and a CD of 2010 Annual Groundwater Monitoring Report