1R - SOURCE

Annual GW Mon. REPORTS

DATE:

2000

2008 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

December 17, 2008

Prepared for:

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

Prepared by:



Midland, Texas



2009 MAR 24 AM 10 14

March 19, 2009

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

Re:

Plains All American – 2008 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

Larry Johnson, NMOCD, Hobbs, NM

Enclosures

December 17, 2008

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: 2008 Annual Groundwater Monitoring Report

Livingston Ridge to Hugh - P. Sims

NE 1/4 of the SE 1/4, 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 2008 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,

Jerracon

Prepared by:

Catharine London, P. G. Senior Project Manager

Reviewed by:

Barrett W. Bole, P. G.

Terracon Consultants, Inc.

24 Smith Road, Suite 261

Midland, Texas 79705 Phone 432,684,9600

Fax 432.684.9608

www.terracon.com

Office Manager

TABLE OF CONTENTS



Page No.

1.0	INTRO	DUCTION 1
2.0	FIELD	ACTIVITIES 3
3.0	DATA	EVALUATION 4
4.0	FINDIN	NGS AND RECOMMENDATIONS 8
LIST C	F APP	ENDICES
Appen	dix A:	Figure 1- Topographic Map
		Figure 2 – Site Plan
		Figure 3 – Groundwater Gradient Map (02/29/08)
		Figure 4 – Groundwater Gradient Map (05/28/08)
		Figure 5 – Groundwater Gradient Map (08/21/08)
		Figure 6 – Groundwater Gradient Map (11/06/08)
		Figure 7 – Groundwater Contaminant Concentration Map (02/29/08)
		Figure 8 – Groundwater Contaminant Concentration Map (05/28/08)
		Figure 9 – Groundwater Contaminant Concentration Map (08/21/08)
		Figure 10 – Groundwater Contaminant Concentration Map (11/08/08)
Appen	dix B:	Tables
Appen		Laboratory Data Sheets
Appen	dix D:	CD of 2008 Annual Groundwater Monitoring Report and Historical Gauging Data

2008 Annual Groundwater Monitoring Report

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

Plains Pipeline, L.P. Livingston Ridge to Hugh P. Sims Terracon Project Number A4077008 December 17, 2008

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 a 2006 Annual Groundwater Monitoring and Soil Closure Status Reports and a 2007 Annual Groundwater Monitoring Report for submittal to the NMOCD. Four quarterly groundwater monitoring and sampling events were conducted during 2007 by Terracon. The events were performed on February 29, 2008, May 28, 2008, August 21, 2008 and November 8, 2008 at the Livingston Ridge to Hugh - P. Sims site located in Lea County, New Mexico.

The objective of the quarterly sampling events was to gauge the fifteen groundwater monitor wells (MW-1 through MW-15) and temporary monitor well TMW-1 which is currently located in the center of the former excavation, and to collect samples of groundwater from each well for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) (quarterly), and total petroleum hydrocarbons (TPH) and polycyclic aromatic hydrocarbons (PAHs), (annually). TPH and PAH samples were collected from all sixteen of the wells on February 29, 2008.

At the direction of the NMOCD, Plains began conducting annual sampling of all monitor wells, even wells containing PSH, for TPH, BTEX and PAHs annually in 2008 and BTEX for the remainder of the three quarterly sampling events.

1.3 Standard of Care

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

Plains Pipeline, L.P. Livingston Ridge to Hugh P. Sims Terracon Project Number A4077008 December 17, 2008

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 29, 2008, May 28, 2008, August 21, 2008 and November 8, 2008 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 phase separated hydrocarbons (PSH). Based on the gauging data, PSH was present during

Plains Pipeline, L.P. Livingston Ridge to Hugh P. Sims Terracon Project Number A4077008 December 17, 2008

2008 in temporary monitor well TMW-1 at thicknesses ranging from a 0.02 feet to 1.74 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 2008 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 2008. Prior to sample collection, each of these monitor wells was purged with a disposable bailer until three well volumes of water were removed, or the well failed to recharge. Following purging, a groundwater sample was collected using the disposable bailer.

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 Environmental Lab of Texas, a Xenco Laboratories Company, an analytical laboratory in Odessa, Texas for standard turnaround analysis for BTEX using EPA SW-846 Method 8021B in each of the four quarters and TPH using EPA SW-846 Method 8015M and PAHs using EPA SW-846 Method 8270C in February 2008.

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 2008 sampling event was 0.002 ft/ft and toward the southeast;
- The gradient/direction during the May 2008 sampling event was 0.002 ft/ft and toward the southeast;
- The gradient/direction during the August 2008 sampling event was 0.002 ft/ft and toward the southeast; and
- The gradient/direction during the November 2008 sampling event was 0.003 ft/ft and toward the southeast.

Groundwater flow direction remained relatively consistent throughout 2008, to the southeast. Water level measurement data is summarized in Table 1 in Appendix B.

Plains Pipeline, L.P. Livingston Ridge to Hugh P. Sims Terracon Project Number A4077008 December 17, 2008

Groundwater elevations in 2008 declined approximately ½ foot in all monitor wells at the site. In order to enhance recovery at the site, Oxygen Release Compound (ORC™) socks were installed in monitor wells MW-4, MW-7, MW-8 and MW-9 in May 2008. At this time, Terracon began monitoring natural attenuation parameters in select wells at the site on a monthly 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 29, 2008. The first quarter results are summarized below:

- TPH was not detected above laboratory reporting limits in the groundwater samples obtained from monitor wells MW-3, MW-4, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, and MW-15.
- TPH was detected in the groundwater samples collected from monitor wells MW-1 (at 7.12 mg/l), MW-2 (at 6.66 mg/l), MW-5 (at 21.16 mg/l) and TMW-1 (at 23.66 mg/l); however, the NMWQCC has not established a groundwater standard for TPH;
- Benzene constituents were not detected at concentrations above the laboratory reporting limit and/or NMWQCC groundwater standard in the groundwater samples collected from monitor wells MW-1, MW-2, MW-3, and MW-5 through MW-15;
- Benzene was detected in the groundwater samples collected from monitor wells MW-4 (at 0.0578 mg/l) and TMW-1 (at 3.004 mg/l), which exceeded the NMWQCC groundwater standard of 0.01 mg/l for benzene;
- Ethylbenzene was detected at a concentration of 1.046 mg/l and total xylenes were detected at a concentration of 1.838 mg/l, in the groundwater sample collected from TMW-1, which exceeded their respective NMWQCC groundwater standards of 0.75 mg/l and 0.62 mg/l. Toluene was not detected above the laboratory reporting limit in the groundwater sample collected from TMW-1;

- Toluene, ethylbenzene and total xylenes were not detected above their respective laboratory reporting limits and/or the NMWQCC groundwater standards in the remainder of the groundwater samples collected from the monitor wells (MW-1 through MW-15) at the site;
- PAH constituents were not detected at concentrations above their respective laboratory reporting limits and/or NMWQCC groundwater standards in the groundwater samples collected from monitor wells MW-1 through MW-4, and MW-6 through MW-15; and,
- Naphthalene was detected in the groundwater samples collected from monitor wells MW-5 (at 0.031 mg/l) and TMW-1 (at 0.069 mg/l), concentrations which exceeded the NMWQCC groundwater standard of 0.03 mg/l for naphthalene. Other PAH constituents were not detected in the groundwater samples collected from monitor wells MW-5 and TMW-1 at concentrations exceeding their respective laboratory reporting limits and/or NMWQCC groundwater standards.

2nd Quarter

Groundwater samples were collected during the second quarter on May 28, 2008. The second quarter results are summarized below:

- Four monitor wells were not sampled for BTEX constituents in May 2008 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 wells MW-1, MW-4, MW-5, and TMW-1 due to the presence of PSH in May 2008;
- The groundwater samples collected from monitor wells MW-6 and MW-9 through MW-15 did not contain benzene at concentrations above the laboratory reporting limit and/or NMWQCC groundwater standard; and,
- Toluene, ethylbenzene, and total xylenes were not detected in any of the groundwater samples collected from the monitor wells at concentrations exceeding their respective laboratory reporting limits and/or the NMWQCC groundwater standards.

3rd Quarter

Groundwater samples were collected during the third quarter on August 21, 2008. The third quarter results are summarized below:

- Four monitor wells were not sampled for BTEX constituents in August 2008 as they are on a sample reduction schedule. These wells are groundwater monitor wells MW-2, MW-3, MW-7 and MW-8;
- Groundwater monitor wells MW-1 and TMW-1 were not sampled during August 2008, due to the presence of PSH in the wells;
- The groundwater samples collected from monitor wells MW-6, MW-9, MW-10, MW-11, MW-13, MW-14 and MW-15 did not contain benzene at concentrations exceeding the laboratory reporting limit and/or NMWQCC groundwater standard;
- Benzene was detected in the groundwater samples collected from MW-4 (at 0.0232 mg/l), MW-5 (at 0.0107 mg/l) and MW-12 (at 0.0518 mg/l), at concentrations which exceed the NMWQCC groundwater standard; and,
- Toluene, ethylbenzene and total xylenes were not detected at concentrations exceeding their respectively laboratory reporting limits and/or NMWQCC groundwater standards in any of the groundwater samples collected from monitor wells at the site.

4th Quarter

Groundwater samples for the fourth quarter event were collected on November 8, 2008. Results of the fourth quarter results are summarized below:

- Four monitor wells were not sampled for BTEX constituents in November 2008 as they are on a sample reduction schedule. These wells are groundwater monitor wells MW-2, MW-3, MW-7 and MW-8:
- Groundwater monitor wells MW-1 and TMW-1 were not sampled during November 2008, due to the presence of PSH in the wells;
- Benzene was not detected in the groundwater samples collected from monitor wells MW-6 and MW-9 through MW-15 at concentrations which exceeded the laboratory reporting limit and/or their NMWQCC groundwater standard for benzene;
- The groundwater samples collected from monitor wells MW-4 (at 0.0374 mg/l) and MW-5 (at 0.2551 mg/l) contained benzene at concentrations exceeding the NMWQCC groundwater standard for benzene; and,

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

3.3 Historical Data Comparisons

Measurable PSH has not been present in the groundwater monitor wells MW-2 and MW-6 through MW-15 since they were installed at the site. Monitor wells that historically contained PSH (MW-1, MW-4, MW-5) have had PSH present as a sheen in 2008. 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 2008 the thickest PSH measurement was at 1.74 feet in July 2008.

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 not detected at concentrations exceeding their respectively laboratory reporting limits and/or NMWQCC groundwater standards in any of the groundwater samples collected from monitor wells at the site in 2008.

At the direction of the NMOCD, TPH was sampled for the first time in the groundwater samples collected from all monitor wells in February 2008. Groundwater samples collected from monitor wells MW-3, MW-4, and MW-6 through MW-15 did not contain TPH at concentrations exceeding the laboratory reporting limit. TPH was detected in the groundwater samples collected from monitor wells MW-1, MW-2, MW-5 and TMW-1 at concentrations exceeding laboratory reporting limits; however, the NMWQCC has not established a groundwater standard for TPH.

4.0 FINDINGS AND RECOMMENDATION

4.1 Findings

The annual groundwater report presents the results of four groundwater monitoring and sampling events for the 2008 calendar year.

- Measurable PSH was detected in temporary monitor well TMW-1 in during 2008, at thicknesses ranging from 0.02 feet to 1.74 feet;
- PSH was detected periodically as a sheen in monitor wells MW-1, MW-4 and MW-5 in 2008;

Plains Pipeline, L.P. Livingston Ridge to Hugh P. Sims Terracon Project Number A4077008 December 17, 2008

- The groundwater gradient during each quarterly sampling event for 2008, indicate a relatively consistent southeast groundwater flow direction;
- Four groundwater monitor wells (MW-2, MW-3, MW-7 and MW-8) are on a sample reduction program and are sampled annually in February for TPH, PAHs and BTEX constituents;
- The groundwater samples collected from monitor wells MW-2, MW-3, MW-6, MW-7 and MW-8 have not contained TPH, PAHs or BTEX constituents above their respective laboratory reporting limits and/or their NMWQCC groundwater standards since they were installed in September 2002 at the site;
- The groundwater samples collected from monitor wells MW-1, MW-2, MW-5 and TMW-1 contained TPH in February 2008 at concentrations exceeding the laboratory reporting limit; however, the NMWQCC has no established groundwater standard for TPH. The remainder of the groundwater samples collected in February 2008 did not contain TPH above the laboratory reporting limit;
- The groundwater sample collected from monitor well MW-5 contained naphthalene at a concentrations exceeding the NMWQCC groundwater standard for naphthalene. The remainder of the groundwater samples collected in February 2008 did not contain PAH constituents exceeding their respective laboratory reporting limits and/or NMWQCC groundwater standards;
- Groundwater samples collected from monitor wells MW-1, MW-6, MW-9, MW-10, MW-11, MW-13, MW-14 and MW-15 have not contained benzene concentrations exceeding the laboratory reporting limit and/or NMWQCC groundwater standard in 2008;
- Groundwater samples collected from monitor wells MW-4 (February 2008, August 2008 and November 2008); MW-5 (August 2008 and November 2008); MW-12 (August 2008), and TMW-1 (February 2008) contained benzene at concentrations exceeding the NMWQCC groundwater standard;
- Ethylbenzene, and m,p-xylenes were detected in the groundwater sample collected from monitor well TMW-1 in February 2008 at concentrations which exceeded their respective NMWQCC groundwater standards;
- Toluene, ethylbenzene and total xylenes were not detected in any of the remainder of the groundwater samples collected in 2008, at concentrations exceeding their respective laboratory reporting limits and/or their NMWQCC groundwater standards; and

Terracon

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

5.2 RECOMMENDATIONS

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

- Continue PSH recovery purging groundwater from select wells at the site on a weekly schedule to enhance recovery at the site;
- Continue annual groundwater sampling for BTEX, TPH and PAHs for all groundwater monitor wells at the site in February 2009; and,
- Continue quarterly groundwater sampling for BTEX in groundwater for all monitor wells not containing PSH in May, August and November 2009; and,
- Submit an annual report to the NMOCD detailing the 2009 site activities.

DISTRIBUTION

Copy 1: Mr. Edward J. Hansen, Hydrologist

New Mexico Energy, Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Drive Santa Fe, New Mexico 87505

Copy 2: Mr. Larry Johnson

New Mexico Energy, Minerals and Natural Resources Department

Oil Conservation Division, District 1

1625 French Drive

Hobbs, New Mexico 88240

Copy 3: Mr. Jason Henry

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

jhenry@paalp.com

Copy 4: Mr. Jeff Dann

Plains Marketing, L.P. 333 Clay Street, Suite 1600 Houston, Texas 77002

jpdann@paalp.com

Copy 5: Ms. Catharine London

Terracon Consultants 24 Smith Road, Suite 261 Midland, Texas 79705 chlondon@terracon.com

APPENDIX A

Figure 1 – Topographic Map

Figure 2 - Site Plan

Figure 3 – Groundwater Gradient Map (02/29/08)

Figure 4 – Groundwater Gradient Map (05/28/08)

Figure 5 – Groundwater Gradient Map (08/21/08)

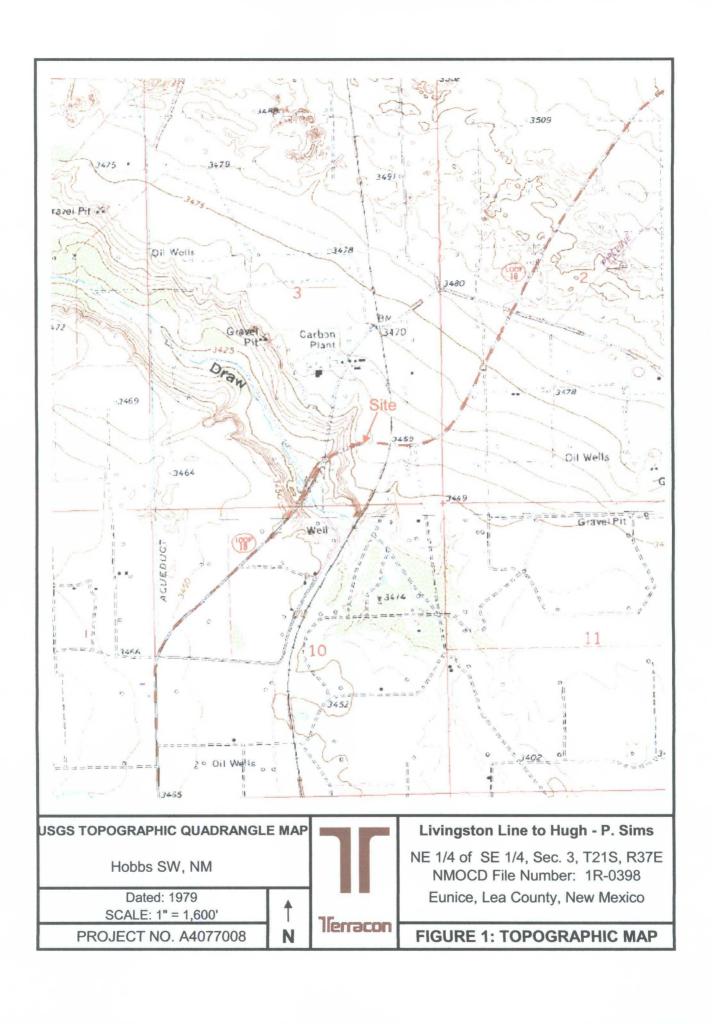
Figure 6 – Groundwater Gradient Map (11/06/08)

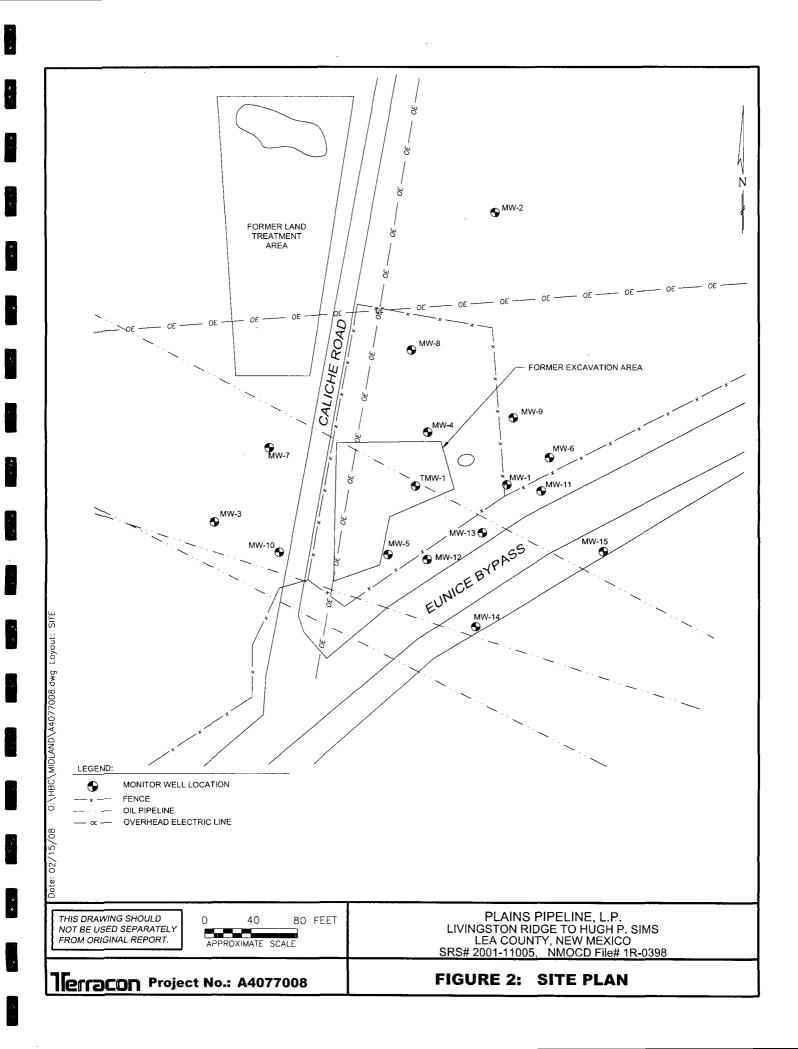
Figure 7 – Groundwater Contaminant Concentration Map (02/29/08)

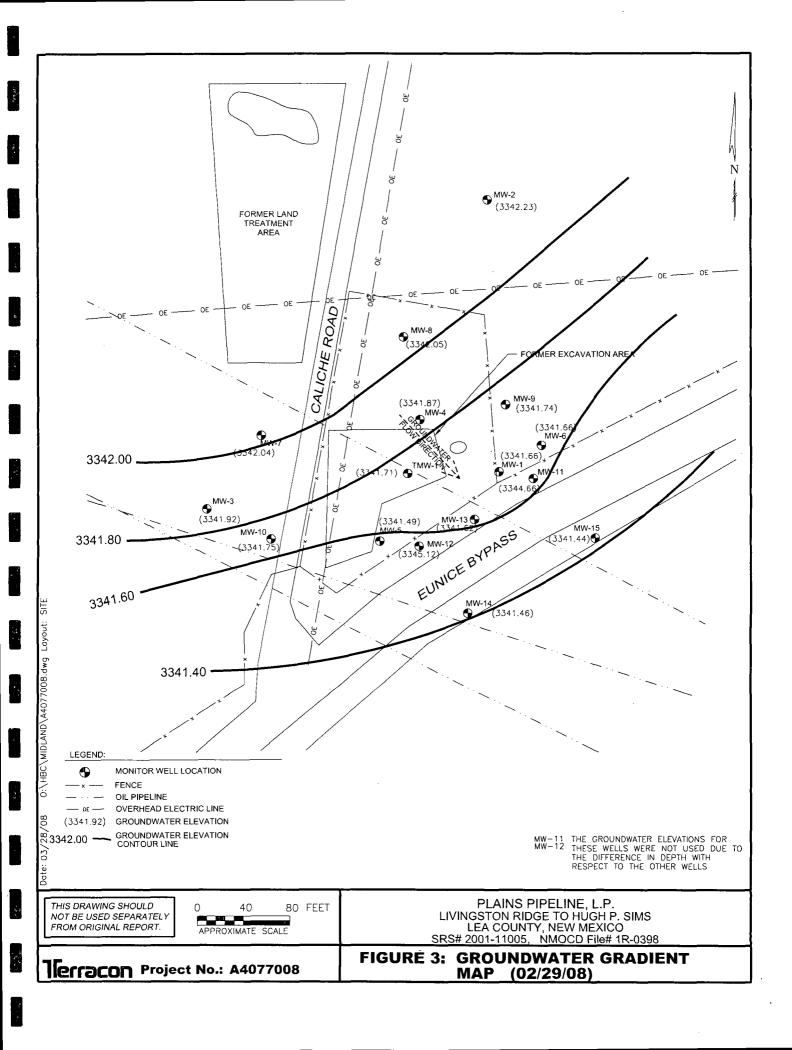
Figure 8 – Groundwater Contaminant Concentration Map (05/28/08)

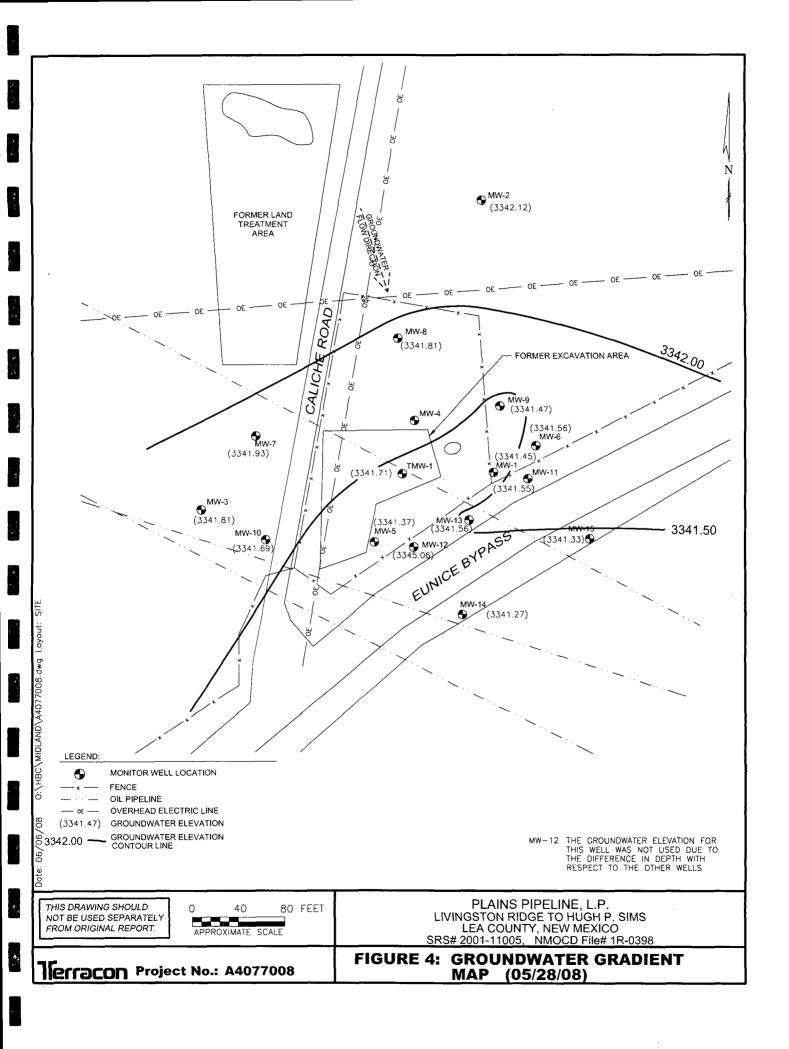
Figure 9 – Groundwater Contaminant Concentration Map (08/21/08)

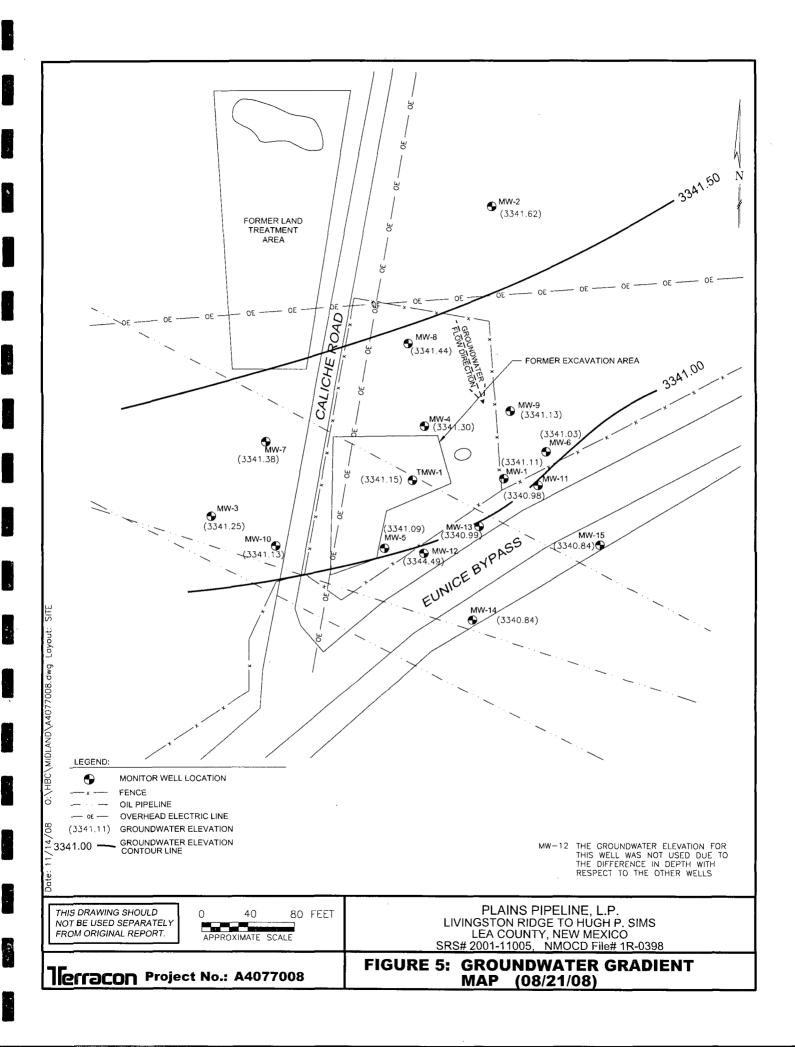
Figure 10 – Groundwater Contaminant Concentration Map (11/08/08)

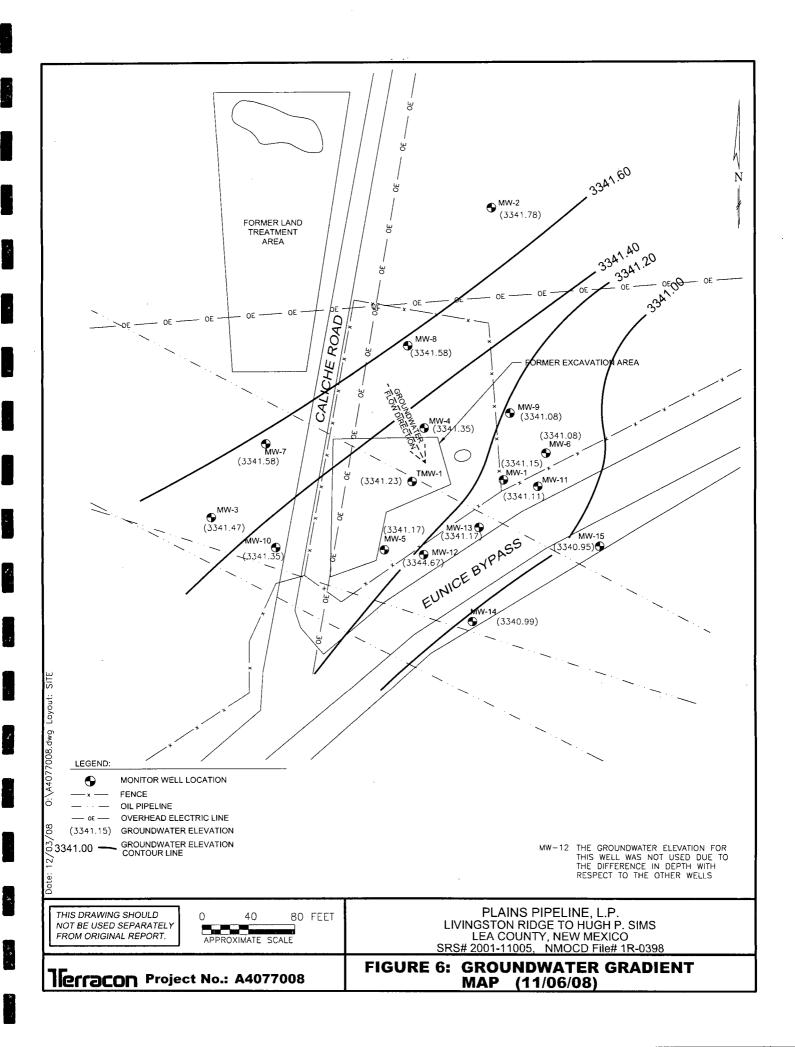


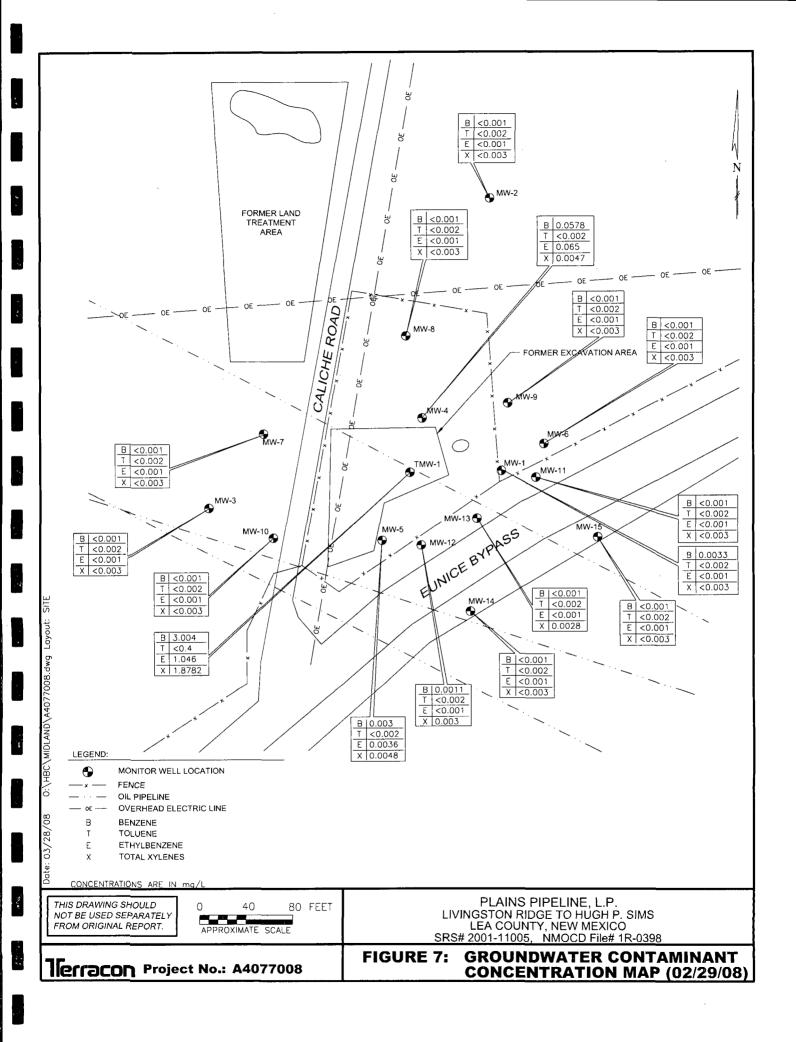


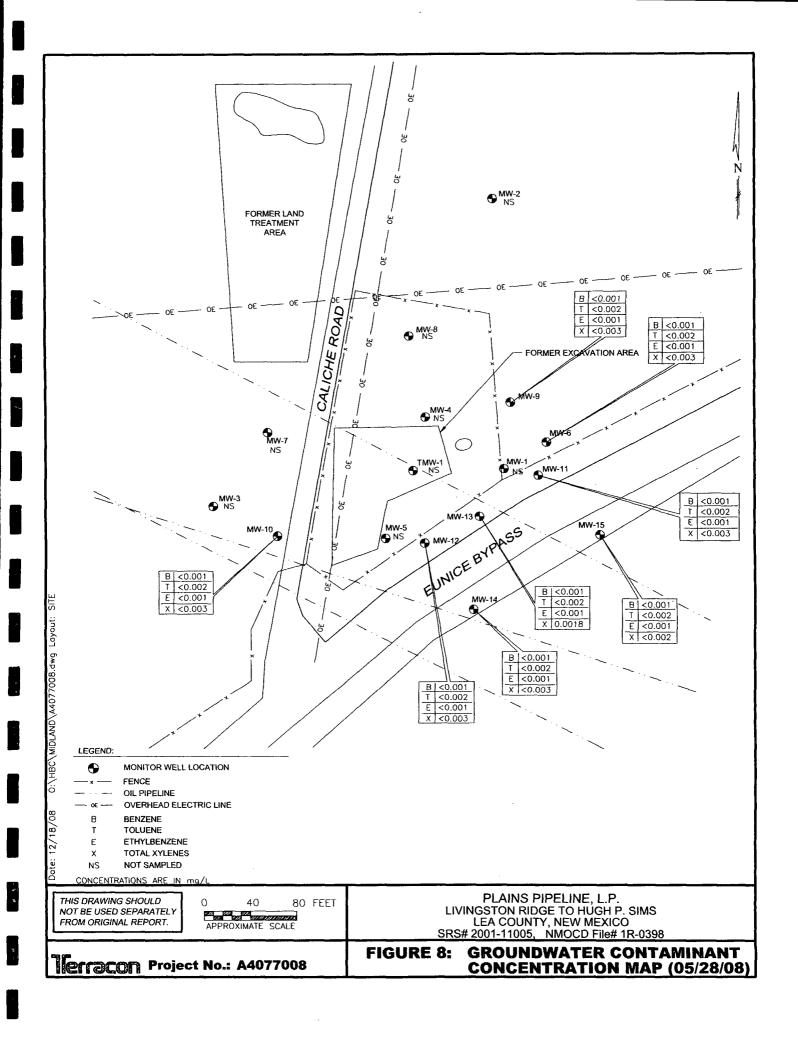


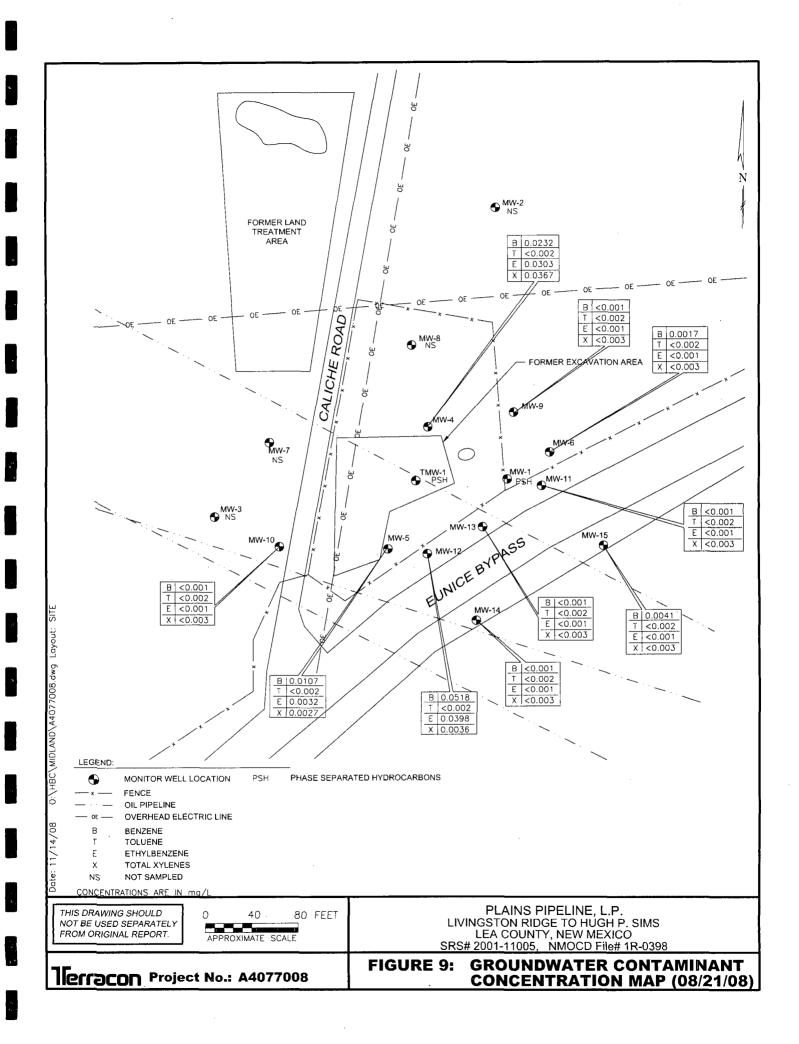


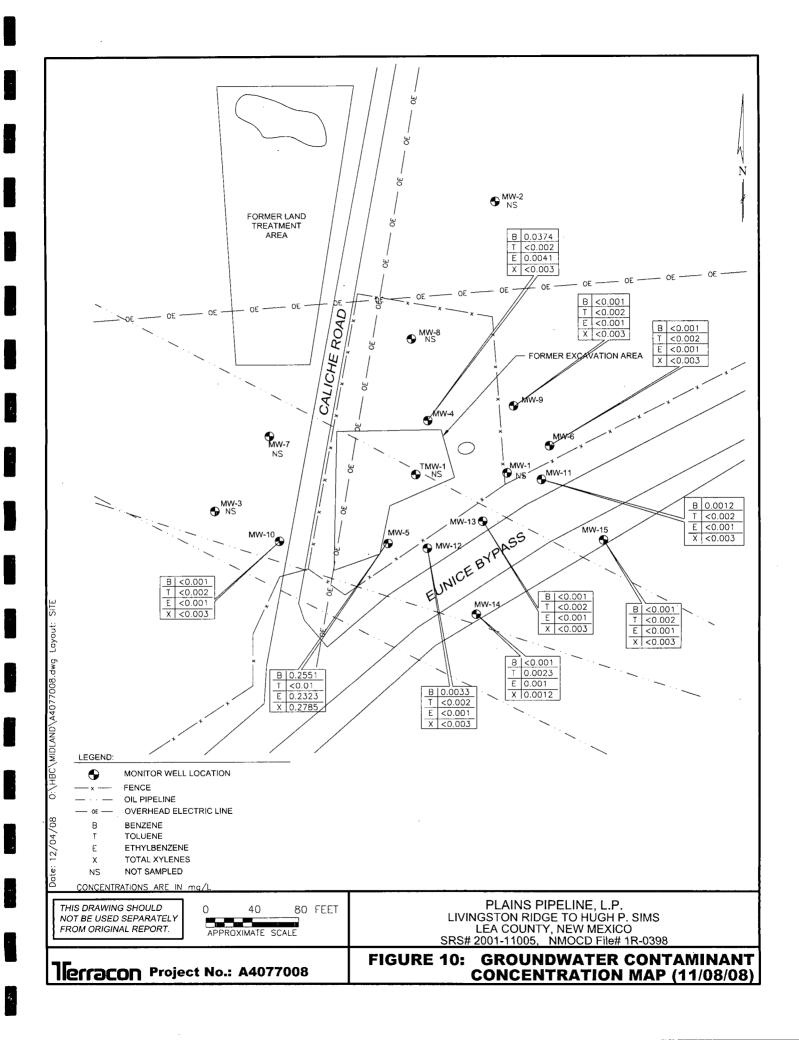












APPENDIX B

Tables

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

WELL	DATE	TOP OF CASING	DEPTH TO	DEPTH TO	PSH	CORRECTED GROUNDWATER	PSH	Volume
NUMBER	MEASURED	ELEVATION	PRODUCT	WATER	THICKNESS	ELEVATION	PURGED	Purged
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	0,011120	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 - 2	11/16/07	3,378.27	0.00	35.88	0.00	3,342.39	0.00	0.00
MW - 2	02/29/08		0.00	36.04	0.00	3,342.23	0.00	0.00
MW - 2	05/28/08		0.00	36.15	0.00	3,342.12	0.00	0.00
MW - 2	08/21/08		0.00	36.65	0.00	3,341.62	0.00	0.00
MW - 2	11/06/08		0.00	36.49	0.00	3,341.78	0.00	0.00
MW - 3	11/16/07	3,367.36	0.00	25.28	0.00	3,342.08	0.00	0.00
MW - 3	02/29/08		0.00	25.44	0.00	3,341.92	0.00	0.00
MW - 3	05/28/08		0.00	25.55	0.00	3,341.81	0.00	0.00
MW - 3	08/21/08		0.00	26.11	0.00	3,341.25	0.00	0.00
MW - 3	11/06/08		0.00	25.89	0.00	3,341.47	0.00	0.00
NA\A / 4	10/07/07	2 272 72	0.00	20.60	0.00	2 242 04	0.00	0.00
MW - 4	12/27/07	3,372.73	0.00	30.69	0.00	3,342.04	0.00	0.00
MW - 4	01/18/08		0.00	30.78	0.00	3,341.95	0.00	0.00
MW - 4	02/20/08		0.00	31.83	0.00	3,340.90	0.00	0.00
MW - 4	02/29/08		0.00	30.86	0.00	3,341.87	0.00	0.00
MW - 4	04/30/08		0.00	30.82	0.00	3,341.91	0.00	0.00
MW - 4	05/28/08		0.00	31.09	0.00	3,341.64	0.00	0.00
MW - 4	06/25/08		0.00	37.66	0.00	3,335.07	0.00	0.00
MW - 4	07/02/08	 	0.00	31.28	0.00	3,341.45	0.00	20.00
MW - 4	07/07/08		0.00	31.34	0.00	3,341.39	0.00	.10.00
MW - 4 MW - 4	07/14/08		0.00	34.51	0.00	3,338.22	0.00	25.00
MW - 4	07/22/08 07/30/08		0.00	31.39	0.00	3,341.34	0.00	10.00
10100 - 4	1 07/30/00	<u> </u>	0.00	31.40	0.00	3,341.33	0.00	10.00

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

WELL	DATE	TOP OF	DEPTH TO	DEPTH	PSH	CORRECTED	PSH	Volume
NUMBER	MEASURED	CASING	PRODUCT	TO	THICKNESS	GROUNDWATER	PURGED	Purged
		ELEVATION		WATER		ELEVATION		
MW - 4	08/05/08		0.00	31.50	0.00	3,341.23	0.00	10.00
MW - 4	08/14/08		0.00	31.55	0.00	3,341.18	0.00	5.00
MW - 4	08/21/08		0.00	31.43	0.00	3,341.30	0.00	0.00
MW - 4	08/27/08		0.00	31.42	0.00	3,341.31	0.00	25.00
MW - 4	09/03/08							25.00
MW - 4	09/20/08		0.00	31.34	0.00	3,341.39	0.00	30.00
MW - 4	09/29/08		0.00	31.34	0.00	3,341.39	0.00	40.00
MW - 4	11/06/08		0.00	31.38	0.00	3,341.35	0.00	0.00
MW - 4	11/15/08		0.00	31.40	0.00	3,341.33	0.00	50.00
MW - 5	12/27/07	3,370.92	0.00	29.29	0.00	3,341.63	0.10	0.00
MW - 5	01/18/08		0.00	29.40	0.00	3,341.52	0.00	0.00
MW - 5	02/20/08		0.00	29.43	0.00	3,341.49	0.00	0.00
MW - 5	02/29/08		0.00	29.43	0.00	3,341.49	0.00	0.00
MW - 5	03/11/08		0.00	29.87	0.00	3,341.05	0.00	0.00
MW - 5	04/30/08		0.00	29.45	0.00	3,341.47	0.00	0.00
MW - 5	05/28/08		0.00	29.55	0.00	3,341.37	0.00	0.00
MW - 5	06/25/08		0.00	29.70	0.00	3,341.22	0.00	0.00
MW - 5	07/02/08		0.00	29.75	0.00	3,341.17	0.00	20.00
MW - 5	07/07/08		0.00	28.83	0.00	3,342.09	0.00	10.00
MW - 5	07/14/08		0.00	29.82	0.00	3,341.10	0.00	25.00
MW - 5	07/22/08		0.00	29.87	0.00	3,341.05	0.00	10.00
MW - 5	07/30/08		0.00	29.93	0.00	3,340.99	0.00	15.00
MW - 5	08/05/08		0.00	29.94	0.00	3,340.98	0.00	15.00
MW - 5	08/14/08		0.00	30.06	0.00	3,340.86	0.00	5.00
MW - 5	08/21/08		0.00	29.83	0.00	3,341.09	0.00	0.00
MW - 5	08/27/08		0.00	29.69	0.00	3,341.23	0.00	25.00
MW - 5	09/03/08							25.00
MW - 5	09/20/08		0.00	29.75	0.00	3,341.17	0.00	30.00
MW - 5	09/29/08		0.00	29.74	0.00	3,341.18	0.00	40.00
MW - 5	11/06/08		0.00	29.75	0.00	3,341.17	0.00	0.00
MW - 5	11/15/08		0.00	29.89	0.00	3,341.03	0.00	50.00
MW - 6	11/16/07	3,377.02	0.00	35.22	0.00	3,341.80	0.00	0.00
MW - 6	02/29/08		0.00	35.36	0.00	3,341.66	0.00	0.00
MW - 6	03/11/08		0.00	35.37	0.00	3,341.65	0.00	0.00
MW - 6	05/28/08		0.00	35.46	0.00	3,341.56	0.00	0.00
MW - 6	08/21/08		0.00	35.99	0.00	3,341.03	0.00	0.00
MW - 6	11/06/08		0.00	35.94	0.00	3,341.08	0.00	0.00
MW - 7	11/16/07	3,369.47	0.00	27.26	0.00	3,342.21	0.00	0.00
MW - 7	02/29/08	,	0.00	27.43	0.00	3,342.04	0.00	0.00
MW - 7	05/28/08		0.00	27.54	0.00	3,341.93	0.00	0.00
MW - 7	08/21/08		0.00	28.09	0.00	3,341.38	0.00	0.00
MW - 7	11/06/08		0.00	27.89	0.00	3,341.58	0.00	0.00
MW - 8	11/16/07	3,373.77	0.00	31.58	0.00	3 3/2 10	0.00	0.00
1919 9 - 0	11/10/0/	3,313.11	0.00	31.50	0.00	3,342.19	0.00	0.00

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

			evalions are r		feet above mea			
WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION	PSH PURGED	Volume Purged
MW - 8	02/29/08	LLLVATION	0.00	31.72	0.00	3,342.05	0.00	0.00
MW - 8	05/28/08		0.00	31.96	0.00	3,341.81	0.00	0.00
MW - 8	08/21/08		0.00	32.33	0.00	3,341.44	0.00	0.00
MW - 8	11/06/08		0.00	32.19	0.00	3,341.58	0.00	0.00
10100 - 0	11700700		0.00	92.13	0.00	0,041.00	0.00	0.00
<u>MW</u> - 9	11/16/07	3,375.92	0.00	34.02	0.00	3,341.90	0.00	0.00
MW - 9	02/29/08		0.00	34.18	0.00	3,341.74	0.00	0.00
MW - 9	05/28/08		0.00	34.45	0.00	3,341.47	0.00	0.00
MW - 9	08/21/08		0.00	34.79	0.00	3,341.13	0.00	0.00
MW - 9	11/06/08		0.00	34.84	0.00	3,341.08	0.00	0.00
MW - 10	11/16/07	3,370.17	0.00	28.20	0.00	3,341.97	0.00	0.00
MW - 10	02/29/08	3,370.17	0.00	28.42	0.00	3,341.75	0.00	0.00
MW - 10	05/28/08		0.00	28.48	0.00	3,341.69	0.00	0.00
MW - 10	08/21/08		0.00	29.04	0.00	3,341.13	0.00	0.00
MW - 10	11/06/08		0.00	28.82	0.00	3,341.35	0.00	0.00
10100 - 10	11/00/00		0.00	20.02	0.00	3,541.55	0.00	0.00
MW-11	11/16/07	3,373.96	0.00	29.69	0.00	3,344.27	0.00	0.00
MW-11	02/29/08	0,010,00	0.00	29.30	0.00	3,344.66	0.00	0.00
MW-11	05/28/08	<u> </u>	0.00	32.41	0.00	3,341.55	0.00	0.00
MW-11	08/21/08		0.00	32.98	0.00	3,340.98	0.00	0.00
MW-11	11/06/08		0.00	32.85	0.00	3,341.11	0.00	0.00
MW- 12	11/16/07	3,372.41	0.00	33.32	0.00	3,339.09	0.00	0.00
MW- 12	02/29/08		0.00	27.29	0.00	3,345.12	0.00	0.00
MW- 12	05/28/08		0.00	27.35	0.00	3,345.06	0.00	0.00
MW- 12	08/21/08		0.00	27.92	0.00	3,344.49	0.00	0.00
MW- 12	11/06/08		0.00	27.74	0.00	3,344.67	0.00	0.00
MW- 13	11/16/07	3,368.91	0.00	27.11	0.00	3,335.59	0.00	0.00
MW- 13	02/29/08	3,300.91	0.00	30.80	0.00	3,341.62	0.00	0.00
MW- 13	05/28/08		0.00	30.28	0.00	3,341.56	0.00	0.00
MW- 13	08/21/08		0.00	31.43	0.00	3,340.99	0.00	0.00
MW- 13	11/06/08		0.00	31.26	0.00	3,341.17	0.00	0.00
MW- 14	11/16/07	3,371.54	0.00	29.94	0.00	3,341.60	0.00	0.00
MW- 14	02/29/08		0.00	30.08	0.00	3,341.46	0.00	0.00
MW- 14	05/28/08		0.00	30.27	0.00	3,341.27	0.00	0.00
MW- 14	08/21/08		0.00	30.70	0.00	3,340.84	0.00	0.00
MW- 14	11/06/08		0.00	30.55	0.00	3,340.99	0.00	0.00
MW- 15	11/16/07	3,377.64	0.00	36.09	0.00	3,341.55	0.00	0.00
MW- 15	02/29/08	3,311.04	0.00	36.20	0.00	3,341.44		
MW- 15	05/28/08			36.31			0.00	0.00
MW- 15	08/21/08	_	0.00		0.00	3,341.33	0.00	0.00
MW- 15	11/06/08		0.00	36.80	0.00	3,340.84	0.00	0.00
1010 0- 10	11/00/00		0.00	36.69	0.00	3,340.95	0.00	0.00

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

		TOP OF		DEPTH	reet above mea	CORRECTED	DOLL	
WELL	DATE	CASING	DEPTH TO PRODUCT	то	PSH THICKNESS	GROUNDWATER	PSH PURGED	Volume Purged
NUMBER	MEASURED	ELEVATION	PRODUCT	WATER	INICKNESS	ELEVATION	PORGED	Furged
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
						`		
							13.20	Total Gallons
							0.31	Total Barrels

Elevations are based on the North American Vertical Datum of 1929.

PSH - Phase Separated Hydrocarbons

ND - PSH not detected

Note: Heavy rains April 3, 4 & 5, 2004;

- * denotes excavation flooded 3 weeks
- (1) Well extended to ground surface, resurveyed on September 7, 2007.

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

<u> </u>	1	All concentrations are in mg/l EPA Method SW 846-8260B TPH Method 8015M									
				A MERIOD SAA 946	3-6200B			IFILMEN	JU 80 13141		
Well ID	Sample Date	Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline C ₆ -C ₁₂	Diesel >C ₁₂ -C ₂₈	Oil >C ₂₈ -C ₃₅	Total C ₆ -C ₃₅	
MW-1	11/02/04	0.725	0.321	0.995	1.68	0.537	NA	NA	NA	NA	
MW-1	03/22/05					to Sample Red					
MW-1	05/17/05					to Sample Red					
MW-1 MW-1	08/15/05 11/18/05	0.104	<0.001	0.0328	0.0347	to Sample Redi 0.00736	NA NA	NA	NA	l NA	
MW-1	02/16/06	1.08	<0.001	0.0320	0.0347	0.0838	NA NA	NA NA	NA NA	NA NA	
MW-1	05/22/06	1.06	<0.005	1.1	1.07	0.0732	NA NA	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					Sampled				,	
MW-1	02/28/07	0.714	<0.02	0.439		498	NA NA	NA NA	NA NA	NA NA	
MW-1	05/11/07	0.966	0.0309	0.288	0.396 0.1945	0.0397	NA NA	NA NA	NA NA	NA NA	
MW-1 MW-1	08/10/07 11/15/07	1.031	<0.05	0.167Nc		<0.05 to the Presence		I NA	NA	INA	
MW-1	02/29/08	0.0033	<0.002	<0.001	<0.002	<0.001	3.68	3.44	<1.5	7.12	
MVV-1	05/28/08	0.0000	10.002	No		to the Presence		0.71	1.0		
MVV-1	08/21/08			No	t Sampled Due	to the Presence	of PSH				
MVV-1	11/08/08			. No	t Sampled Due	to the Presence	of PSH				
10000	00/00/00	-0.004	10.004	10.004	10.004	-0.004					
MW-2	09/30/02	<0.001	<0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	NA NA	NA NA	NA	NA NA	
MW-2	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA NA	NA NA	NA NA	
MW-2	02/27/03 05/12/03	<0.001 <0.001	<0.001 <0.001	<0.001	<0.001 <0.001	<0.001	NA NA	NA NA	NA NA	NA NA	
MW-2		<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA NA	NA	NA NA	
MW-2	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA NA	NA NA	NA NA	
MW-2	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA NA	NA NA	NA NA	NA NA	
MW-2	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA NA	NA NA	NA NA	NA NA	
MW-2	05/06/04	<0.001	<0.001		I		L	INA	INA	INA	
MW-2	08/18/04 03/22/05		Well placed in annual sampling program Not Sampled Due to Sample Reduction								
MW-2				-					· · · · · · · · · · · · · · · · · · ·		
MW-2	05/17/05	±0.004	-0.001	1	ot Sampled Due	to Sample Red	NA NA	NA	NA	. NA	
MW-2	08/15/05	<0.001	<0.001	<0.001		to Sample Red		INA	INA	INA	
MW-2 MW-2	11/18/05 02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA NA	NA NA	NA	NA	
MW-2	05/22/06	<u> </u>	1 10.001	1 40.001		Sampled	I NA	14/1	11/7		
MW-2	08/07/06					Sampled					
MW-2	02/28/07	<0.001	<0.001	<0.001	<0	.001	NA	NA	NA	NA	
MW-2	05/11/07			N	ot Sampled Due	to Sample Red	uction				
MW-2 MW-2	08/10/07					to Sample Red to Sample Red					
MW-2	11/15/07 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	10.001	10,002			to Sample Red		3.51	0.10	0.00	
MW-2	08/21/08					to Sample Red			*		
MW-2	11/08/08			N	ot Sampled Due	to Sample Red	uction			,	
	1	0.001		0.55		0.557		ļ		ļ <u>, </u>	
MW-3	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA NA	NA NA	NA NA	
MW-3	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA NA	NA	NA	
MW-3	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA NA	NA NA	NA NA	
MW-3	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA NA	NA NA	NA NA	
MW-3	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001 <0.001	NA NA	NA	NA NA	NA NA	
MW-3	11/10/03	0.005	<0.001	<0.001	<0.002		NA NA	NA NA	NA NA	NA	
MW-3	11/25/03	0.001	<0.001	<0.001	<0.002	<0.001	NA NA	NA NA	NA NA	NA NA	
MW-3	02/17/04	<0.001	<0.001	<0.001	<0.002 <0.002	<0.001	NA NA	NA NA	NA NA	NA NA	
MW-3	05/06/04	<0.001	<0.001	<0.001		<0.001		NA	NA	NA	
MW-3	08/18/04					nual sampling pro					
MW-3	03/22/05					to Sample Red					
MW-3	05/17/05	0.00070	0.00400			to Sample Red			***	Ţ	
MW-3	08/15/05	0.00976	0.00189	<0.001	<0.002	<0.001	NA	NA	NA	NA	
MW-3	11/18/05	0.00010	0.55			to Sample Red				T	
MW-3	02/16/06	0.00816	<0.001	<0.001	<0.002	<0.001	NA NA	NA	NA	NA	
MW-3	05/22/06					Sampled					
MW-3	08/07/06					Sampled					
MW-3	11/21/06	.0.00:	-0.051	2.55		Sampled				T	
MW-3	02/28/07	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA NA	NA	NA NA	

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

MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-4 MW-4	05/11/07 08/10/07 11/15/07 02/29/08 05/28/08 08/21/08 11/08/08	Benzene	EP/ Toluene	A Method SW 846 Ethylbenzene		o-Xylene	Gasoline	TPH Metho	od 8015M Oil	Total		
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-4	05/11/07 08/10/07 11/15/07 02/29/08 05/28/08 08/21/08	Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xviene	1	Diesel	Oil	Total		
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-4 MW-4	08/10/07 11/15/07 02/29/08 05/28/08 08/21/08					o xylene	C ₆ -C ₁₂	>C ₁₂ -C ₂₈	>C ₂₈ -C ₃₅	C ₆ -C ₃₅		
MW-3 MW-3 MW-3 MW-3 MW-3 MW-4 MW-4	11/15/07 02/29/08 05/28/08 08/21/08		Not Sampled Due to Sample Reduction									
MW-3 MW-3 MW-3 MW-3 MW-4 MW-4	02/29/08 05/28/08 08/21/08		Not Sampled Due to Sample Reduction									
MW-3 MW-3 MW-3 MW-3 MW-4 MW-4	05/28/08 08/21/08		Not Sampled Due to Sample Reduction									
MW-3 MW-3 MW-4 MW-4	08/21/08	<0.001	<0.002	<0.001	<0.002	<0.001	<1.5	<1.5	<1.5	<1.5		
MW-4 MW-4			· · · · · · · · · · · · · · · · · · ·	N	ot Sampled Due	to Sample Redu	uction			*		
MW-4 MW-4	11/08/08			N	ot Sampled Due	to Sample Redu	uction					
MW-4				N	ot Sampled Due	to Sample Redu	uction					
MW-4												
	09/30/02	2.43	0.74	0.466	0.946	0.284	NA	NA	NA	NA		
	11/06/02	3.96	0.015	0.174	0.58	0.108	NA NA	NA	NA	NA		
MW-4	02/27/03		·			the Presence of				· · · · · · · · · · · · · · · · · · ·		
MW-4	05/12/03	1.88	0.004	0.723	0.548	0.056	NA	NA	NA	NA		
MW-4	08/20/03		T			the Presence of				·		
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	NA		
MW-4	08/18/04		· · · · · · · · · · · · · · · · · · ·			the Presence of			 	· · · · · · · · · · · · · · · · · · ·		
MW-4	11/02/04	0.745	<0.001	0.00856	0.00648	0.00364	NA NA	NA	NA	NA		
MW-4	03/22/05					to Sample Redu						
MW-4	05/17/05			· · · · · · · · · · · · · · · · · · ·		to Sample Redu		,				
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		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	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	0.000	1 0 000		· · · · · · · · · · · · · · · · · · ·	the Presence o				1		
MW-4	08/21/08	0.0232 0.0374	<0.002 <0.002	0.0303 0.0041	0.022 <0.002	0.0147	NA NA	NA NA	NA NA	NA NA		
MW-4	11/08/08	0.0374	<0.002	0.0041	₹0.002	<0.001	NA	NA	NA	NA		
3.00/5	00/20/00		<u> </u>	NI-4	Camarala d Dura to	the December	[DOI!			L		
MW-5 MW-5	09/30/02 11/06/02					the Presence of the Presence of						
MW-5 MW-5	02/27/03 05/12/03	0.226	0.01	0.399	0.704	the Presence o	NA NA	NA	NA	I ÑA		
MW-5	08/20/03	V.22V	0.01			the Presence of		111/7	14/	1 14/7		
MW-5	11/10/03	0.511	<0.001	1.07	0.625	0.02	NA NA	NA	NA	NA		
MW-5	02/17/04	0.445	0.048	3.33	3.01	0.153	NA NA	NA NA	NA NA	NA NA		
MW-5	05/06/04	0.0744	0.0207	0.222	0.273	0.148	NA NA	NA NA	NA NA	NA NA		
MW-5	08/24/04	0.156	0.00385	0.232	0.161	0.124	NA NA	NA NA	NA NA	NA NA		
MW-5	11/02/04	0.371	<0.001	0.0209	0.0407	0.00102	NA NA	NA NA	NA NA	NA NA		
MW-5	03/22/05			<u> </u>		to Sample Redu				L		
MW-5	05/17/05	•				to Sample Redu		•				
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 I	NA	NA	NA		
MW-5	02/16/06	0.0108	<0.001	0.00861	0.002	0.00202	NA NA	NA NA	NA NA	NA		
MW-5	05/22/06	<0.001	<0.001	0.00152	<0.002	<0.001	NA	NA NA	NA	NA		
MW-5	08/07/06	0.0386	<0.001	0.0619	0.0669	0.0204	NA NA	NA NA	NA NA	NA NA		
MW-5	11/21/06	,				Sampled		· · · · · · · · · · · · · · · · · · ·		1		
MW-5	02/28/07	0.36	<0.005	0.412		.04	NA	NA	NA	NA		
MW-5	05/11/07	0.397	0.0141	0.387	0.291	0.196	NA T	NA NA	NA	NA NA		
MW-5	08/10/07	0.2765	<0.025	0.2858	0.2025	0.1315	NA NA	NA NA	NA	NA NA		

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

		.,	rn.	All concen		TPH Method 8015M				
			EPA	Method SW 840	5-8260B			1PH Meth	DO SO ISIVI	1
Well ID	Sample Date	Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline C ₆ -C ₁₂	Diesel >C ₁₂ -C ₂₈	Oil >C ₂₈ -C ₃₅	Total C ₆ -C ₃₅
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					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-6	09/30/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA 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				ell placed in ann	nual sampling pro				
MW-6	11/02/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-6	03/22/05					to Sample Redu				,
MW-6	05/17/05					to Sample Redu				·
MW-6	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA.	NA	NA	NA
MW-6	11/18/05					to Sample Redu	iction		_	
MW-6	02/16/06	0.00133	0.00133 <0.001 0.00298 <0.002 <0.001							
MW-6	05/22/06		Not Sampled							
MW-6	08/07/06					Sampled				
MW-6	11/21/06		1 0001	0.004		Sampled	, sia		114	1
MW-6	02/28/07	<0.001	<0.001	<0.001		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 NA	NA
MW-6	08/10/07	0.0012	<0.001	0.0059	<0.002	0.0014	NA NA	NA NA	NA_	NA NA
MW-6	11/15/07	<0.001	<0.002	0.001	<0.002	<0.001	NA 14.5	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 NA
MW-6	08/21/08	0.0017	<0.002	<0.001	<0.002	<0.001	NA NA	NA NA	NA	NA
MW-6	11/08/08	<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	NA	NA NA
MW-7 MW-7	05/06/04 08/18/04	<0.001	<0.001	<0.001	<0.002	<0.001 nual sampling pro	NA	NA NA	NA]. NA
MW-7	03/22/05					to Sample Redu				
MW-7	05/17/05					e to Sample Redu to Sample Redu				
MW-7	08/15/05	0.0059	<0.001	<0.001	<0.002	<0.001	NA NA	NA	NA	NA
MW-7	11/18/05	5.5500				to Sample Redu		1 '*''	14/1	1 19/3
MW-7	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA ·	NA	NA
MW-7	05/22/06		-:			Sampled	1			,,
MW-7	08/07/06					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			N	ot Sampled Due	e to Sample Redu	uction			
MW-7	08/10/07					e to Sample Redu		-		
MW-7	11/15/07			N	ot Sampled Due	e to Sample Redu	uction			
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			N	ot Sampled Due	to Sample Redu	uction			•
MW-7	08/21/08					to Sample Redu				

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

Well ID				All concentrations are in mg/l EPA Method SW 846-8260B TPH Method 8015M								
Well 1D	Cample Datell					· . · ·	Gasoline	Diesel	Oil	Total		
	Sample Date	Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	C ₆ -C ₁₂	>C ₁₂ -C ₂₈	>C ₂₈ -C ₃₅	C ₆ -C ₃₅		
MW-7	11/08/08			N	ot Sampled Due	to Sample Red	uction					
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	NA		
MW-8	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA NA	NA NA	NA		
MW-8	11/10/03 02/17/04	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.002 <0.002	<0.001 <0.001	NA NA	NA NA	NA NA	NA NA		
MVV-8 MVV-8	05/06/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA NA	NA NA	NA NA	NA NA		
MW-8	08/18/04	~0.001	~0.001			nual sampling pro		IVA	L INA	<u> INA</u>		
MW-8	03/22/05					to Sample Red						
MW-8	05/17/05					to Sample Red						
MW-8	08/15/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA		
MW-8	11/18/05			N	ot Sampled Due	to Sample Red			·	4		
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						
8-WM	08/07/06		Not Sampled									
MW-8	11/21/06		Not Sampled									
MW-8	02/28/07	<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			N		to Sample Redi	uction		,			
MW-8	02/29/08	<0.001								<1.5		
MW-8	05/28/08		Not Sampled Due to Sample Reduction									
MW-8	08/21/08		····			to Sample Red						
MW-8	11/08/08			<u> </u>	ot Sampled Due	to Sample Redi	uction	1				
1000	00/20/02	10.004	10.004	-0.004	10.004	:0.004				A1.5		
MVV-9 MVV-9	09/30/02 11/06/02	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	NA NA	NA NA	NA NA	NA NA		
MW-9	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA NA	NA NA	NA NA		
MW-9	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA NA	NA NA	NA NA		
MW-9	08/20/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA NA	NA NA	NA NA		
MW-9	11/10/03	<0.001	<0.001	<0.001	<0.002	<0.001	NA NA	NA 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				/ell placed in an	nual sampling pr	ogram					
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 NA	NA		
MW-9	11/18/05	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA		
MW-9	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA .		
MW-9	05/22/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA NA	NA	NA	NA		
MW-9	08/07/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA NA	NA	NA		
MW-9	11/21/06 02/28/07	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.002	<0.001 .001	NA NA	NA NA	NA NA	NA ·		
MW-9	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA NA	NA NA	NA NA		
MW-9	08/10/07	<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA NA	NA NA	NA NA		
MW-9	11/15/07	<0.001	<0.001	<0.001	<0.002	<0.001	NA NA	NA NA	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	NA NA	NA NA		
MW-9	08/21/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA NA	NA NA	NA NA	NA NA		
MW-9	11/08/08	<0.001	<0.002	<0.001	<0:002	<0.001	NA NA	NA	NA NA	NA		

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

1										
1 11	Į.		EPA	Method SW 840	6-8260B			TPH Meth	od 8015M	
Well ID	Sample Date	Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline C ₆ -C ₁₂	Diesel >C ₁₂ -C ₂₈	Oil >C ₂₈ -C ₃₅	Total C ₆ -C ₃₅
				-						
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
MVV-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
MVV-10	08/18/04			<u>V</u>	Vell placed in an	nual sampling pr	rogram			
MW-10	03/22/05					to Sample Redu				
MW-10	05/17/05	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				to Sample Redu				
MW-10	08/15/05	0.0251	0.0106	0.00197	0.00231	0.00102	NA	NA	NA	NA
MW-10	11/18/05					to Sample Redu			,	
MW-10	02/16/06	0.0361	<0.001	0.00319	<0.002	<0.001	NA	NA	NA	NA
MVV-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
MVV-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		.001	NA	NA	NA	NA
MW-10	05/11/07	0.00145	<0.001	0.000361 (J)	<0.001	<0.001	NA	NA	ÑΑ	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	NA NA	NA NA
MW-10	08/21/08	<0.001	<0.002	<0.001 <0.001	<0.002 <0.002	<0.001 <0.001	NA NA	NA NA	NA NA	NA NA
MW-10	11/08/08	<0.001	<0.002	<0.001	<0.002	<0.001	INA .	I NA	NA .	INA
MW-11	11/06/02	<0.001	<0.001	<0.001	<0.001	<0.001	NA	NA	NA NA	NA
MW-11	02/27/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA NA	NA NA	NA NA
MW-11	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA NA	NA NA	NA NA
MW-11	08/20/03	0.147	<0.001	0.069	0.069	0.033	NA NA	NA NA	NA NA	NA NA
MVV-11	11/10/03	0.526	<0.001	<0.001	0.08	0.047	NA NA	NA NA	NA NA	NA NA
MW-11	02/17/04	0.103	<0.001	<0.001	0.013	0.007	NA NA	NA NA	NA NA	NA
MW-11	05/06/04	2.05	<0.005	0.253	0.137	0.119	NA NA	NA NA	NA NA	NA NA
MW-11	08/18/04	0.0973	<0.001	<0.001	0.00263	0.00137	NA NA	NA	NA NA	NA.
MVV-11	11/02/04	0.087	<0.001	0.00163	<0.002	<0.001	NA NA	NA	NA NA	NA.
MW-11	03/22/05	0.0246	<0.001	0.00163	<0.002	<0.001	NA NA	NA NA	NA	NA
MW-11	05/17/05	0.0263	<0.001	0.00353	<0.002	<0.001	NA	NA	NA	NA
MVV-11	08/15/05	0.0127	<0.001	<0.001	<0.002	<0.001	NA	NA NA	NA	NA NA
MW-11	11/18/05	0.00922	<0.001	0.00115	<0.002	<0.001	NA NA	NA NA	NA NA	NA NA
MW-11	02/16/06	0.00283	<0.001	<0.001	<0.002	<0.001	NA NA	NA NA	NA NA	NA NA
MW-11	05/22/06	0.00173	<0.001	<0.001	<0.002	<0.001	NA NA	NA NA	NA NA	NA NA
MW-11	08/07/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA NA	NA NA	NA NA	NA NA
MW-11	11/21/06	0.00166	<0.001	<0.001	<0.002	<0.001	NA NA	NA	NA NA	NA
MW-11	02/28/07	<0.001	<0.001	<0.001		0039	NA NA	NA NA	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	NA NA	NA.
MW-11	08/10/07	<0.001	<0.001	<0.001	<0.002	0.0011	NA NA	NA NA	NA	NA NA
MW-11	11/15/07	0.0021	<0.002	0.0014	0.0022	0.0076	NA NA	NA NA	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	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

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

[1		FΡΔ	Method SW 84	trations are in mg	1		TPH Metho	nd 8015M	
j				The thick is a second of the s						
Well ID	Sample Date	Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline C ₆ -C ₁₂	Diesel >C ₁₂ -C ₂₈	Oil >C ₂₈ -C ₃₅	Total C ₆ -C ₃₅
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	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	0.0	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-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 NA
MW-13	11/02/04	0.233	<0.001	0.00348	0.00464	0.0038	NA	NA	NA	NA
MW-13	03/22/05	0.18	<0.001	0.00239	<0.002	<0.001	NA	NA	. NA	NA
MW-13	05/17/05	0.0758	<0.001	0.00277	<0.002	<0.001	NA	NA	NA	NA
MW-13	08/15/05	0.00668	<0.001	0.00121	<0.002	<0.001	NA	NA	NA	NA
MW-13	11/18/05	0.00134	<0.001	0.00121	<0.002	<0.001	NA	NA	NA	NA
MW-13	02/16/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	05/22/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	08/07/06	0.0013	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	11/21/06	0.00214	<0.001	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	02/28/07	<0.001	0.0022	0.0049	0.	112	NA	NA	NA	NA
MW-13	05/11/07	0.000684 (J)	0.000352 (J)	0.00293	0.000972 (J)	0.00625	NA	NA	NA	NA
MW-13	08/10/07	<0.005	<0.005	<0.005	<0.01	0.0079	NA	NA	NA	NA
MW-13	11/15/07	0.0013	<0.002	<0.001	<0.002	0.007	NA	NA	NA	NA
MW-13	02/29/08	<0.001	<0.002	<0.001	<0.002	0.0028	<1.5	<1.5	<1.5	<1.5
MW-13	05/28/08	<0.001	<0.002	<0.001	<0.002	0.0018	NA	NA	NA	NA
MW-13	08/21/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA
MW-13	11/08/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA	NA	NA	NA

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

			EP/	A Method SW 84	trations are in mg/ 6-8260B			TPH Metho	od 8015M	
Well ID	Sample Date	Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline C ₆ -C ₁₂	Diesel >C ₁₂ -C ₂₈	Oil >C ₂₈ -C ₃₅	Total C ₆ -C ₃₅
DANA/ 4.4	11/06/02	*0.001	<0.001	<0.001	<0.001	<0.001	NA	NΔ	NIA	NIA.
MW-14 MW-14	11/06/02 02/27/03	<0.001 <0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA NA	NA NA	NA NA
MW-14	05/12/03	<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	NA 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	NA
MW-14	05/17/05	0.00906	<0.001	<0.001	<0.002	<0.001	NA NA	NA NA	NA	NA NA
MW-14 MW-14	08/15/05 11/18/05	<0.001 0.00494	<0.001 <0.001	<0.001 <0.001	<0.002 <0.002	<0.001 <0.001	NA NA	NA NA	NA NA	NA NA
MW-14	02/16/06	<0.00494	<0.001	<0.001	<0.002	<0.001	NA NA	NA NA	NA NA	NA NA
MW-14	05/22/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA NA	NA NA	NA NA	NA NA
MW-14	08/07/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA NA	NA NA	NA	NA NA
MW-14	11/21/06	<0.001	<0.001	<0.001	<0.002	<0.001	NA NA	NA NA	NA	NA NA
MW-14	02/28/07	<0.001	<0.001	<0.001		.001	NA	NA	NA	NA .
MW-14	05/11/07	0.000836 (J)	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	ŃΑ
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	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	NA
MW-15	02/17/04	<0.001	<0.001	<0.001	<0.002	<0.001	NA NA	NA NA	NA NA	NA NA
MW-15 MW-15	05/06/04 08/24/04	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.002 <0.002	<0.001 <0.001	NA NA	NA NA	NA NA	NA NA
MW-15	11/02/04	<u> </u>	<u> </u>			nual sampling p		INA	NA	I MA
MW-15	03/22/05		· · · · · · · · · · · · · · · · · · ·			e to Sample Red				
MW-15	05/17/05					to Sample Redi			-	
MW-15	08/15/05	0.137	<0.001	<0.001	0.00927	0.0102	NA	NA	NA	NA
MW-15	11/18/05			N	ot Sampled Due	to Sample Red	uction			'
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		.001	NA NA	NA	NA	NA
MW-15 MW-15	05/11/07 08/10/07	0.000462 (J) <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.002	<0.001 <0.001	NA NA	NA NA	NA NA	NA
MW-15	11/15/07	<0.001	<0.001	<0.001	<0.002	<0.001	NA NA	NA NA	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	NA	NA
MW-15	08/21/08	0.0041	<0.002	<0.001	<0.002	<0.001	NA	NA NA	NA NA	NA NA
MW-15	11/08/08	<0.001	<0.002	<0.001	<0.002	<0.001	NA NA	NA	NA NA	NA
Theres	14/00/04	465								
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
TMVV-1	02/16/06	1.69	<0.002	1.03	2.19	0.604	NA	NA J	NA NA	NA NA
TMW-1	05/22/06 08/07/06					Sampled				
T INIAA-1	1 00/07/00	I			NOT	Sampled				,

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

			EP	A Method SW 84	6-8260B			TPH Metho	od 8015M	
Well ID	Sample Date	Benzene	Toluene	Ethylbenzene	m, p-Xylenes	o-Xylene	Gasoline C ₆ -C ₁₂	Diesel >C ₁₂ -C ₂₈	Oil >C ₂₈ -C ₃₅	Total C ₆ -C ₃₅
TMW-1	11/21/06				Not	Sampled		<u> </u>	<u> </u>	'
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			No	ot Sampled Due	to the Presence	of PSH			
TMW-1	11/15/07			No	ot 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			No	ot Sampled Due	to the Presence	of PSH			
TMW-1	08/21/08			No.	ot Sampled Due	to the Presence	of PSH			
TMW-1	11/08/08			No.	ot 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
	Groundwater ndards	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

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

	1- Methylnaphtalene	NA	A Z	0.008		AN	AA	NA	NA	<0.005	ĄN	AN	NA AN	<0.005		NA	NA	NA	NA	<0.005		AA	NA	NA	NA	0.028	ΔN	A'A	Ą	NA	<0.005	NA	AN	NA NA	<0.005		NA	NA	NA	<0.005
	Benzo(k) fluoranthene	Ą	<0.001	<0.005		¥	Ą	AA	<0.001	<0.005	AN	ΑΝ	<0.001	<0.005		¥.	AA	Ą	<0.001	<0.005		NA V	NA	NA NA	<0.001	<0.005	ĄN	¥	¥	<0.001	<0.005	AN	Ą	<0.001	<0.005		NA	ΝΑ	<0.001	<0.005
	2-Methylnaphthalene	NA	0.028	<0.005		AN	AN	NA	<0.001	<0.005	NA	NA	0.001	<0.005		NA	NA	NA	0.042	<0.005		ΑĀ	. NA	NA	0.022	0.024	AN	AN	NA	<0.001	<0.005	AN	NA	<0.001	<0.005		ΝΑ	NA	<0.001	<0.005
	Pyrene	<0.00005	<0.001	<0.005		0.000121	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.00005	<0.001	<0.005		0.000284	<0.00005	<0.00005	<0.001	<0.005	<0 00005	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.001	<0.005
	Phenanthrene	0.00399	0.012	<0.005		<0.00005	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		0.000891	0.000227	0.000312	900.0	<0.005		<0.00005	0.000898	0.000427	<0.001	<0.005	<0.00005	<0.00005	0.000063	0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.001	<0.005
	Naphthalene	0.0000136	0.017	<0.005		<0.00005	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		0.000167	0.0025	0.00492	0.034	<0.005		0.0403	0.00768	0.00136	0.019	0.031	<0.00005	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.001	<0.005
	Indeno (1,2,3-cd) pyrene	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.001	<0.005
	Fluorene	0.00229	0.001	<0.005		0.000078	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		0.000498	0.0002	0.000251	0.001	<0.005		0.00268	0.000419	0.000306	909.0	<0.005	<0.00005	<0.00005	0.000126	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.001	<0.005
JL 3510	Fluoranthene	<0.00005	<0.001	<0.005		0.000056	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.00005	<0.001	<0.005		+	+	<0.00005	<0.001	<0.005	<0.00005	-	<0.00005	<0.001	<0.005	<0.00005	\vdash	<0.001	<0.005		<0.00005	<0.00005	<0.001	<0.005
All concentrations are in mg/L EPA SW846-8270C and 3510	Dibenz(a,h) Flu	<0.00005	<0.001	<0.005		<0.00005		<0.00005	<0.001	<0.005	<0.00005		<0.001	<0.005	_	+	_	2	<0.001	<0.005	4	+	_	2	<0.001	<0.005	<0.00005		<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005	\dashv	4	2	<0.001	<0.005
concentrativ	Chrysene ar	<0.00005	<0.001	<0.005	L	< 0.00005	<0.00005	< 0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005				<u></u>	<0.001	<0.005	_	4	_	5	<0.001	<0.005	<0.00005 <	┕	<0.00005	<0.001	<0.005	<0.00005 <	<0.00005	<0.001	L		_	2	_	<0.005
A	Benzo(j,k) fluoranthene	<0.00005	NA	N A		<0.00005	<0.00005	<0.00005	NA	₹	<0.00005	<0.00005	NA	AA	_	_	\top	92	¥	¥N	T	7	\exists	02	ΑN	¥.	<0.00005	⇈	<0.00005	Ą	¥	<0.00005	<0.00005	Ą	NA		┪	90	ΝΑ	NA
	Benzo(g,h,l) perylene	<0.0000.0>	<0.001	<0.005		<0.00005	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.00000	<0.001	<0.005		<0.00000>	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.001	<0.005
	Benzo(b) B fluoranthen e	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		<0.000005	<0.00005	<0.00005	<0.001	<0.005		0.000129	<0.00005	<0.00005	<0.001	<0.005	<0.00005	H	5	<0.001	<0.005	<0.00005	┝	<0.001	<0.005		<0.00005	<0.00005	<0.001	<0.005
	Benzo(a) fi	<0.00005	<0.001	<0.005			<0.00005	<0.00005	<0.001	<0.005	<0.00005	5	<0.001	<0.005		1		2	<0.001	<0.005	4				<0.001	<0.005	<0.00005	<0.00005	2	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		_	2	<0.001	<0.005
	Benzo(a) anthracene	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		$\overline{}$	_	ç	<0.001	<0.005		0.000459	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005	$\overline{}$		<0.00005	<0.001	<0.005
	Anthracene	<0.00005	<0.001	<0.005		0.000061	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		<0.00005	<0.00000>	<0.0000.0>	<0.001	<0.005	10000	0.00507	<0.000005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.001	<0.005
	Acenaphthene Acenaphthylene Anthracene	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		0.000144	<0.0000.0	<0.0000.0>	<0.001	<0.005		0.000856	0.00007	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.001	<0.005
	cenaphthene A	<0.00005	<0.001	<0.005		0.000118	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		0.000156	<0.00000	<0.00000>	<0.001	<0.005	00000	0.000732	0.000092	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.00005	<0.001	<0.005	<0.00005	<0.00005	<0.001	<0.005		<0.00005	<0.00005	<0.001	<0.005
	SAMPLE DATE Ac	02/16/06	05/11/07	02/29/08		06/18/03	03/22/05	02/16/06	05/11/07	02/29/08	06/18/03	02/16/06	05/11/07	02/29/08	+	+	+	4	05/11/07	02/29/08	+	4	08/24/04	4	05/11/07	02/29/08	06/18/03		\dashv	05/11/07	02/29/08	06/18/03	02/16/06	05/11/07	02/29/08	+	4	+	05/11/07	02/29/08
	SAMPLE	MW - 1	MW - 1	MW - 1		MW - 2	MW - 2	MW - 2	MW - 2	MW - 2	MW - 3	MW - 3	MW - 3	MW - 3	, , , , , ,	MW - 4	MW - 4	MW - 4	MW - 4	MW - 4	1 1000		+	\dagger	MW - 5	MW - 5	MW - 6	9 - MM	MW - 6	MW - 6	MW - 6	MW - 7	MW - 7	MW - 7	MW - 7		MW - 8	MW - 8	MW - 8	MW - 8

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

	L					ļ.				_							-			
SAMPLE	SAMPLE DATE A	Acenaphthene Acenaphthylene		Anthracene	Benzo(a) anthracene	Benzo(a) pyrene		Benzo(g,h,l) perylene			Dibenz(a,h) F	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene	2-Methylnaphthalene	Benzo(k) fluoranthene	1- Methylnaphtalene
6 - MM	06/18/03	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005	П	ш	\vdash	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	ΑN	AN	NA
6 - MM	03/22/05	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	7		\rightarrow	<0.00005	0.000084	<0.00005	0.000544	0.000058	<0.00005	NA	NA NA	NA
NW - 8	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000005	<0.0000.0	302	2	<0.000005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	AN S	AN S	AN S
S - ANIA	/0/11/00	20.001	50.001	<0.001	V0.001	×0.001	<0.001	<0.001	≨.	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
n- MM	0.7/29/08	\$0.00	<0.00>	<0.005	<0.005	<0.005	<0.005	<0.005	¥	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 10	06/18/03	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005	<0.00000	<0.00000>	<0.00005	<0.00005	<0.0000	<0.00005	5000000>	<0.00005	50 0000 02	<0.00005	ΔN	ΑN	AN
MW - 10	02/16/06	<0.00005	<0.00005	<0 00005	<0 00005	<0.00005	<0.00005	<0.00005	╈	1	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00003	20,00005	V V	ΔN	AN
MW - 10	05/11/07	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	+		<0.001	<0.001	<0.000	<0.0003	<0.0003	<0.0003	<0.0000 0.00000 0.00000	<0.001	<0.001	AN
MW - 10	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	AN	<0.00	<0.00	<0.00	<0.00 C	<0.005	500.0>	50.05	<0.005	<0.005	<0.005	<0.005
										;			200.0	222		200.00	200.07			
MW - 11	11/06/02	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	1	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	AN	AN	Ϋ́
MW - 11	08/18/04	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	Т	<0.00005	<0.00005	<0.00005	0.000075	<0.00005	0.0014	0.000154	<0.00005	AN	ΑN	ΨN
MW - 11	03/22/05	0.000068	0.000055	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	П		<0.00005	<0.00005	0.00008	<0.00005	0.00167	0.000296	<0.00005	NA	ΑN	AN
MW - 11	02/16/06	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	Г	ㄴ	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	AN	AN	Ą
MW - 11	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ΑN
MW - 11	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA A	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
AAAA 40	44,00,00	00000	7,1000	000000	20000	20000	10000	10000	+	4		1000								
MAY 12	70/00/11	0.000070	0.00005	0.000096	<0.0000	50000	200000	<0.00005 50.00005	\top		<0.0000.0>	<0.00005	0.000662	<0.00005	0.000198	0.000722	0.000071	AN S	¥.	Y S
MW - 12	03/22/05	0.000078	00000	<0.00003	20,000	20,000,00	500000	<0.00005	20,000,02	20,00005	<0.00005	<0.00005	0.000078	<0.00005	0.000262	0.000246	<0.00005	Y S	¥ S	AN VI
MW - 12	02/16/06	0.000055	<0.00005	<0.00005		<0.0000>	<0.00005	<0.00005	Т		<0.00000	<0.00005	0.000100	<0.00005	40 0000 0V	0.000263	×0.00003	ΔN	4	Z A
MW - 12	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	\top	_	<0.0000	<0.0000	<0.0000 <0.0000	<0.00000 <0.00000	<0.0003	2000	20000	<0.001	<0.001	AN.
MW - 12	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA N	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
							-				-									
MW - 13	11/06/02	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000232	<0.00005	<0.00005	NA	NA	NA
MW - 13	08/18/04	0.000139	0.000086	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	0.000141	<0.00005	0.00234	0.000702	<0.00005	NA	NA	ΝΑ
MW - 13	03/22/05	0.000105	0.000072	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	\neg	- 1	<0.00005	<0.00005	0.000366	<0.00005	0.000746	0.000426	<0.00005	ΑΝ	ΑΝ	ΑN
MW - 13	02/16/06	0.000079	<0.00005	<0.00005	<0.00005	<0.00005	<0.000005	<0.00005	302	<0.00005	<0.00005	<0.00005	0.000079	<0.00005	0.000064	0.000132	<0.00005	NA	AA	NA
MW - 13	05/11/07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MW - 13	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	¥	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW - 14	11/08/02	20 00005	-0 0000F	70,000,07	300000	30000	300000	30000	20000	20000	30000	30000	300000	30000	30000	30000	30000		V 12	VIV
MW - 14	08/18/04	200000	20000	200005	20000	20000	70,000	70,00005	$^{+}$	\bot	700000	20000	200000	20000	0.0000	0.00003	20000	2 2	2 2	5 5
MW - 14	03/22/05	<0.00005	<0.00005	<0.00005	_	20000	200005	×0.0005	╈		00000	00000	20,0000	<0.00003	0.00113	0.00003	20,00005	S N		2 2
MW - 14	02/16/06	<0.00005	<0.00005	<0.00005	_	<0.00005	<0.00005	<0.00005	$^{+}$		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	AN	ΨN	AN
MW - 14	05/11/07	<0.001	<0.001	<0.001	_	<0.001	<0.001	<0.001	\vdash	┖	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	0.001	<0.001	AN AN
MW - 14	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ΑN	<0.005	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
					\neg		+		_											
MIN - 13	70/00/11	200000	\$0.0000	500000		<0.000.0	+	<0.00005	+	4	+	<0.0000.0>	50000000	<0.0000.0>	<0.00005	<0.00005	†	Y Y	₹Z	¥ :
MW - 15	02/16/06	20,00005	50.00005	×0.00005	500000	50,00005	20,0000	20,0000	<0.00005	5000000	<0.00005	<0.00005	<0.00005	<0.00005	<0.0000	<0.00005	<0.00005	XX XX	Y Y	Y S
MW - 15	05/11/07	10000	, C.	VO.0000	70.000	VO.00003	70.000	70.0000	+		+	×0.00003	50.0000	×0.00003	0.0033	0.0003	†	20 001	1000	C S
MW - 15	02/29/08	<0.005	<0.005	<0.005	<0.005	<0.00	<0.00	<0.00	AN	<0.00	<0.00		<0.00	<0.00	<0.00	00.00	<0.005	<0.005	<0.00	200.0>
TMW - 1	02/16/06	0.00146	0.00147	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00221	<0.00005	<0.00005	0.00818	<0.00005	0.0886	0.0149	0.000788	NA	NA	NA
TMW - 1	05/11/07	<0.002	<0.002	<0.004	<0.002	<0.003	<0.002	<0.006	Ā	<0.002	<0.001		0.008	<0.003	0.062	<0.002	<0.002	0.197	<0.002	ΑN
TMW - 1	02/29/08	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	Ϋ́	<0.025	<0.025	<0.025	<0.025	<0.025	690.0	<0.025	<0.025	0.04	<0.025	0.042
NWWOCC Standards	apreprie	NG	1	1		0 0004	1		1	1			1	Į.	000			NE		N.
	Calibaids	Ľ	Ž	Į.	Ľ	0.000	L L	U Z	Z.	NE	Ž	Į,	Į.	ĮŽ	0.03	IJ.	Ę		¥	Ę

Table 4

Enhanced Bioremediation Parameters for Selected Groundwater Monitor Wells

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

Measurments are noted in the table

Monitor Well	Date	Temperature (°C)	Conductivity (mS/cm)	DO (%)	DO (mg/l)	pH (pH units)	ORP (mV)
MW-4	05/22/08	20.56	21.23	73.2	6.53	7.20	-39
MW-4	06/24/08	20.28	2.953	42.3	3.79	7.24	-140
MW-4	07/26/08	20.39	2.494	9.7	0.86	6.89	-169
MW-4	08/15/08	20.38	3.055	3.6	0.33	7.13	-177
MW-4	09/24/08	20.27	4.532	4.3	0.41	6.82	-21
MW-4	10/22/08	20.18	4.176	12.1	1.08	7.45	-111
MW-4	11/11/08	19.67	3.875	15.5	1.37	7.21	-192
MW-9	05/22/08	20.21	5.238	211.4	18.8	10.81	70
MW-9	06/24/08	20.24	5.518	113.7	10.13	8.27	143
MW-9	07/26/08	21.74	0.064	77.5	6.72	6.98	307
MW-9	08/15/08	20.37	5.142	27.4	2.43	8.62	182
MW-9	09/24/08	20.13	5.135	40.7	3.54	7.14	144
MW-9	10/22/08	19.84	5.059	. 64.8	5.8	7.76	151
MW-9	11/11/08	19,41	6.283	79.3	7.15	7.43	137
MW-11	05/22/08	20.62	3.434	5.2	0.46	6.88	-109
MW-11	06/24/08	20.14	3.71	49.5	4.5	6.90	-51
MW-11	07/26/08	20.64	3.177	9	0.8	6.71	20
MW-11	08/15/08	20.58	3.687	4.1	0.37	6.87	58.3
MW-11	09/24/08	20.90	2.598	6.2	0.53	6.71	-131
MW-11	10/22/08	19.65	3.201	11.4	0.98	7.14	-112
MW-11	11/11/08	19.30	4.193	15.3	1.37	6.98	-42

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

APPENDIX C

Laboratory Data Sheets

Analytical Report 298800

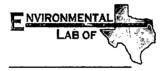
for

PLAINS ALL AMERICAN EH&S

Project Manager: Camille Reynolds

Livingston Ridge - HP Sims 2001-11005

10-MAR-08



12600 West I-20 East Odessa, Texas 79765

Texas certification numbers: Houston, TX T104704215

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

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

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

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





10-MAR-08

Project Manager: Camille Reynolds PLAINS ALL AMERICAN EH&S 1301 S. COUNTY ROAD 1150 Midland, TX 79706

Reference: XENCO Report No: 298800

Livingston Ridge - HP Sims

Project Address:

Camille Reynolds:

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 298800. 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. 298800 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 298800



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge - HP Sims

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-11	W	Feb-29-08 11:33		298800-001
MW-13	W	Feb-29-08 12:04		298800-002
MW-12	W	Feb-29-08 12:32		298800-003
MW-14	W	Feb-29-08 12:55		298800-004
MW-15	W	Feb-29-08 13:26		298800-005
MW-10	W	Feb-29-08 14:25		298800-006
MW-3	. W	Feb-29-08 14:46		298800-007
MW-7	W	Feb-29-08 15:06		298800-008
MW-2	W	Feb-29-08 15:43		298800-009
MW-9	W	Feb-29-08 16:07		298800-010
MW-6	W	Feb-29-08 16:36		298800-011
MW-8	W	Feb-29-08 17:03		298800-012
MW-5	W	Feb-29-08 17:34		298800-013
MW-4	W	Feb-29-08 18:00		298800-014
MW-I	W	Feb-29-08 18:24		298800-015
Decon	W	Feb-29-08 18:38		298800-016
TMW-1	W	Feb-29-08 18:50		298800-017



Project Name: Livingston Ridge - HP Sims

Date Received in Lab:

Mar-03-08 05:00 pm

Contact: Camille Reynolds

Project Id: 2001-11005

Report Date:

10-MAR-08

Project Location:

Project Manager:

: Brent Barron, II

	Lab Id:	298800-0	001	298800-0	002	298800-	003	298800-0)04
Analysis Requested	Field Id:	MW-11	٠ .	MW-1	3	MW-1	2	MW-14	
	Depth:		ĺ		ĺ		ľ		
	Matrix:	WATE	R	WATE	R	WATE	R	WATE	R
	Sampled:	Feb-29-08	11:33	Feb-29-08	12:04	Feb-29-08	12:32	Feb-29-08	12:55
BTEX by EPA 8021B	Extracted:	Mar-04-08	15:00	Mar-04-08	15:00	Mar-04-08	15:00	Mar-04-08	15:00
BIEX by EI A 0021B	Analyzed:	Mar-04-08	19:03	Mar-04-08	19:21	Mar-04-08	19:39	Mar-04-08	19:57
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.0010	ND	0.0010	0.0011	0.0010	ND	0.0010
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
m,p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene		ND	0.0010	0.0028	0.0010	0.0030	0.0010	ND	0.0010
Xylenes, Total		ND		0.0028		0.003		ND	
Total BTEX		ND		0.0028		0.0041		ND	
SVOA PAHs List by EPA 8270C	Extracted:	Mar-05-08	09:56	Mar-05-08	09:58	Mar-05-08	10:00	Mar-05-08	10:02
SVORTIMIS Elist by Et 4 02/00	Analyzed:	Mar-06-08	14:34	Mar-06-08	15:18	Mar-06-08	16:03	Mar-06-08	16:48
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Acenaphthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Acenaphthylene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Anthracene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)anthracene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)pyrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(b)fluoranthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(k)fluoranthene		ND	0.005	ND	0.005	ND	0.005	- ND	0.005
Benzo(g,h,i)perylene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Chrysene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Dibenz(a,h)Anthracene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluoranthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluorene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Indeno(1,2,3-c,d)Pyrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
1-Methylnaphthalene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
2-Methylnaphthalene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Naphthalene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Phenanthrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Pyrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the tab hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi



Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005

Contact: Camille Reynolds

Date Received in Lab: Mar-03-08 05:00 pm

Report Date:

10-MAR-08

Project Location:

Project Manager:

Brent Barron, II

	Lab Id:	298800-00)1	298800-0	02	298800-0	03	298800-0	04
Analysis Requested	Field Id:	MW-11		MW-13		MW-12		MW-14	
· -	Depth:						-		ŀ
	Matrix:	WATER		WATER	t	WATER	:	WATE	₹.
	Sampled:	Feb-29-08 1	1:33	Feb-29-08 1	2:04	Feb-29-08 1	2:32	Feb-29-08	12:55
TPH By SW8015 Mod	Extracted:	Mar-04-08 1	4:56	Mar-04-08 1	4:58	Mar-04-08 1	5:00	Mar-04-08	15:02
TITIBY SWOOTS NICE	Analyzed:	Mar-05-08 0	0:56	Mar-05-08 0	1:23	Mar-05-08 0	1:50	Mar-05-08	02:17
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
C6-C12 Gasoline Range Hydrocarbons		ND	1.50	ND	1.50	ND	1.50	ND	1.50
C12-C28 Diesel Range Hydrocarbons		ND	1.50	ND	1.50	ND	1.50	ND	1.50
C28-C35 Oil Range Hydrocarbons		ND	1.50	ND	1.50	ND	1.50	ND	1.50
Total TPH		ND		ND		ND		ND	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi Since 1990



Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005

Date Received in Lab: Mar-03-08 05:00 pm

Contact: Camille Reynolds

Report Date: 10-MAR-08

Project Location:

Project Manager: Brent Barron, II

	Lab Id:	298800-0	05	298800-0	006	298800-0	007	298800-0	08
Analysis Requested	Field Id:	MW-15	;	MW-10	•	MW-3		MW-7	
,	Depth:]
	Matrix:	WATE	R	WATE	R	WATE	R	WATE	3
	Sampled:	Feb-29-08	13:26	Feb-29-08	14:25	Feb-29-08	14:46	Feb-29-08 1	15:06
BTEX by EPA 8021B	Extracted:	Mar-04-08	15:00	Mar-04-08	15:00	Mar-04-08	15:00	Mar-04-08	15:00
DIEA DY EFA 8021B	Analyzed:	Mar-04-08	20:15	Mar-04-08	20:33	Mar-04-08	20:52	Mar-04-08	21:10
,	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
m,p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Xylenes, Total		ND		ND		ND		ND	
Total BTEX		ND		ND		ND		ND	
SVOA PAHs List by EPA 8270C	Extracted:	Mar-05-08	10:04	Mar-05-08	10:06	Mar-05-08	10:08	Mar-05-08	10:10
SVOATAIIS LIST BY ETA 02/0C	Analyzed:	Mar-06-08	17:32	Mar-06-08	18:17	Mar-06-08	19:01	Mar-06-08	19:45
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Acenaphthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Acenaphthylene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Anthracene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)anthracene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)pyrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(b)fluoranthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(k)fluoranthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(g,h,i)perylene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Chrysene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Dibenz(a,h)Anthracene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluoranthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluorene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Indeno(1,2,3-c,d)Pyrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
1-Methylnaphthalene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
2-Methylnaphthalene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Naphthalene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Phenanthrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Pyrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi



Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005

Date Received in Lab:

Mar-03-08 05:00 pm

Contact: Camille Reynolds

Report Date:

10-MAR-08

Project Location:

Project Manager:

Brent Barron, II

	Lab Id:	298800-0	05	298800-0	06	298800-0	07	298800-0	08
Analysis Requested	Field Id:	MW-15		MW-10		MW-3	}	MW-7	
	Depth:				İ				
	Matrix:	WATER	t	WATER	٤	WATER	:	WATE	R
	Sampled:	Feb-29-08 1	3:26	Feb-29-08 1	4:25	Feb-29-08 1	4:46	Feb-29-08	15:06
TPH By SW8015 Mod	Extracted:	Mar-04-08 1	5:04	Mar-04-08 1	5:06	Mar-04-08 1	5:08	Mar-04-08	15:10
TITE S TOOLS WING	Analyzed:	Mar-05-08 0	2:44	Mar-05-08 0	3:11	Mar-05-08 0	3:38	Mar-05-08	04:05
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
C6-C12 Gasoline Range Hydrocarbons		ND	1.50	ND	1.50	ND	1.50	ND	1.50
C12-C28 Diesel Range Hydrocarbons		ND	1.50	ND	1.50	ND	1.50	ND	1.50
C28-C35 Oil Range Hydrocarbons		ND	1.50	ND	1.50	ND	1.50	ND	1.50
Total TPH		ND		ND		ND		ND	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.

The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.

Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Since 1990

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



Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005

Date Received in Lab:

Mar-03-08 05:00 pm

Contact: Camille Reynolds

Report Date:

10-MAR-08

Project Location:

Project Manager:

Brent Barron, II

	Lab Id:	298800-0	009	298800-0)10	298800-	011	298800-	012
Analysis Requested	Field Id:	MW-2		MW-9		MW-6	,	MW-8	;
	Depth:								
	Matrix:	WATE	R	WATE	R	WATE	R	WATE	R
	Sampled:	Feb-29-08	15:43	Feb-29-08	16:07	Feb-29-08	16:36	Feb-29-08	17:03
BTEX by EPA 8021B	Extracted:	Mar-04-08	15:00	Mar-04-08	15:00	Mar-05-08	14:00	Mar-05-08	14:00
DIEA by EI A 6021B	Analyzed:	Mar-04-08	21:28	Mar-04-08	21:47	Mar-05-08	20:56	Mar-05-08	21:14
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
Ethylbenzene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
m,p-Xylenes		ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020
o-Xylene		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010
Xylenes, Total		ND		ND		ND		ND	
Total BTEX		ND		ND		ND		ND	
SVOA PAHs List by EPA 8270C	Extracted:	Mar-05-08	10:12	Mar-05-08	10:14	Mar-05-08	14:38	Mar-05-08	14:42
5 VOILTAILS LIST BY ELLA 02/00	Analyzed:	Mar-06-08	20:30	Mar-06-08	21:15	Mar-07-08	14:49	Mar-07-08	12:47
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Acenaphthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Acenaphthylene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Anthracene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)anthracene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(a)pyrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(b)fluoranthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(k)fluoranthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzo(g,h,i)perylene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Chrysene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Dibenz(a,h)Anthracene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluoranthene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Fluorene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Indeno(1,2,3-c,d)Pyrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
1-Methylnaphthalene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
2-Methylnaphthalene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Naphthalene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Phenanthrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005
Pyrene		ND	0.005	ND	0.005	ND	0.005	ND	0.005

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Since 1990

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



Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005

Date Received in Lab:

Mar-03-08 05:00 pm

Contact: Camille Reynolds

Report Date:

10-MAR-08

Project Location:

Project Manager:

Brent Barron, II

	Lab Id:	298800-00	09	298800-010		298800-011		298800-012	
Analysis Requested	Field Id:	MW-2		MW-9		MW-6		MW-8	
	Depth:								
	Matrix:	WATER	١	WATER	١	WATER	٤	WATE	R
	Sampled:	Feb-29-08 1	5:43	Feb-29-08 1	6:07	Feb-29-08 1	6:36	Feb-29-08	17:03
TPH By SW8015 Mod	Extracted:	Mar-04-08 1	5:12	Mar-04-08 1	5:14	Mar-04-08 1	5:24	Mar-04-08	15:26
11 11 25 5 W 5012 W 100	Analyzed:	Mar-05-08 0	9:17	Mar-05-08 0	9:44	Mar-05-08 1	3:37	Mar-05-08	14:02
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
C6-C12 Gasoline Range Hydrocarbons		ND	1.50	ND	1.50	ND	1.50	ND	1.50
C12-C28 Diesel Range Hydrocarbons		3.51	1.50	ND	1.50	ND	1.50	ND	1.50
C28-C35 Oil Range Hydrocarbons		3.15	1.50	ND	1.50	ND	1.50	ND	1.50
Total TPH		6.66		ND		ND		ND	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi

Brent Barron



Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005

Contact: Camille Reynolds

Date Received in Lab:

Mar-03-08 05:00 pm

Report Date:

10-MAR-08

Project Location:

Project Manager: B

Brent Barron, II

	Lab Id:	298800-0	13	298800-0	14	298800-0)15	298800-016
Analysis Requested	Field Id:	MW-5		MW-4		MW-1		Decon
_	Depth:							
	Matrix:	WATE	R	WATE	R	WATE	R	WATER
	Sampled:	Feb-29-08	17:34	Feb-29-08	18:00	Feb-29-08	18:24	Feb-29-08 18:38
BTEX by EPA 8021B	Extracted:	Mar-05-08	14:00	Mar-05-08	14:00	Mar-05-08	14:00	
DIEM by EIM 6021D	Analyzed:	Mar-05-08	21:32	Mar-05-08	21:51	Mar-05-08	22:09	•
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	
Benzene		0.0030	0.0010	0.0578	0.0010	0.0033	0.0010	
Toluene		ND	0.0020	ND	0.0020	ND	0.0020	
Ethylbenzene		0.0036	0.0010	0.0650	0.0010	ND	0.0010	
m,p-Xylenes		0.0030	0.0020	0.0047	0.0020	ND	0.0020	
o-Xylene		0.0018	0.0010	ND	0.0010	ND	0.0010	
Xylenes, Total		0.0048		0.0047		ND		
Total BTEX		0.0114		0.1275		0.0033		
SVOA PAHs List by EPA 8270C	Extracted:	Mar-05-08	14:46	Mar-05-08	14:50	Mar-05-08 14:54		
	Analyzed:	Mar-07-08	10:33	Mar-07-08	13:32	Mar-07-08	11:18	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	
Acenaphthene		ND	0.005	ND	0.005	ND	0.005	
Acenaphthylene		ND	0.005	ND	0.005	ND	0.005	
Anthracene		ND	0.005	ND	0.005	ND	0.005	
Benzo(a)anthracene		• ND	0.005	ND	0.005	ND	0.005	
Benzo(a)pyrene		ND	0.005	ND	0.005	ND	0.005	
Benzo(b)fluoranthene		ND	0.005	ND	0.005	ND	0.005	
Benzo(k)fluoranthene		ND	0.005	ND	0.005	ND	0.005	
Benzo(g,h,i)perylene		ND	0.005	ND	0.005	ND	0.005	
Chrysene .		ND	0.005	ND	0.005	ND	0.005	
Dibenz(a,h)Anthracene		ND	0.005	ND	0.005	ND	0.005	
Fluoranthene		ND	0.005	ND	0.005	ND	0.005	
Fluorene		ND	0.005	ND	0.005	ŃД	0.005	
Indeno(1,2,3-c,d)Pyrene		ND	0.005	ND	0.005	ND	0.005	
1-Methylnaphthalene		0.028	0.005	ND	0.005	0.008	0.005	
2-Methylnaphthalene		0.024	0.005	ND	0.005	ND	0.005	,
Naphthalene		0.031	0.005	ND	0.005	ND	0.005	
Phenanthrene		ND	0.005	ND	0.005	ND	0.005	
Pyrene		ND	0.005	ND	0.005	ND	0.005	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.

The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.

Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi



Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005

Date Received in Lab:

Mar-03-08 05:00 pm

Contact: Camille Reynolds

Report Date:

10-MAR-08

Project Location:

Project Manager:

Brent Barron, II

	Lab Id:	298800-0	13	298800-014		298800-015		298800-016	
Analysis Requested	Field Id:	MW-5		MW-4		MW-1		Decon	
	Depth:		1						
	Matrix:	WATER		WATER	٤	WATER		WATE	R
	Sampled:	Feb-29-08 1	7:34	Feb-29-08 1	8:00	Feb-29-08 1	8:24	Feb-29-08	18:38
TPH By SW8015 Mod	Extracted:	Mar-04-08 1	5:28	Mar-04-08 1	5:30	Mar-04-08 1	5:32	Mar-04-08	15:34
TITES SWOOTS NIGH	Analyzed:	Mar-05-08 1	4:27	Mar-05-08 1	4:52	Mar-05-08 1	5:17	Mar-05-08	15:42
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
C6-C12 Gasoline Range Hydrocarbons		9.46	1.50	ND	1.50	3.68	1.50	ND	1.50
C12-C28 Diesel Range Hydrocarbons		11.7	1.50	ND	1.50	3.44	1.50	ND	1.50
C28-C35 Oil Range Hydrocarbons		ND	1.50	ND	1.50	ND	1.50	ND	1.50
Total TPH		21.16		ND		7.12		ND	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.

The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.

Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Since 1990

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

Brent Barron



Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005

Date Received in Lab: Mar-03-08 05:00 pm

Contact: Camille Reynolds

Report Date: 10-MAR-08

Project Location:

Project Manager: Brent Barron, II

	Lab Id:	298800-01	7			
Analysis Requested	Field Id:	TMW-1				
	Depth:			•		
	Matrix:	WATER				
ļ	Sampled:	Feb-29-08 18	3:50			
BTEX by EPA 8021B	Extracted:	Mar-06-08 10	0:53			
DIEX by EIX 0021B	Analyzed:	Mar-06-08 16	5:27			
	Units/RL:	mg/L	RL			
Benzene	·	3.004	0.0200			
Toluene		ND	0.0400			
Ethylbenzene		1.046	0.0200			
m,p-Xylenes		1.838	0.0400			
o-Xylene		0.0402	0.0200			
Xylenes, Total		1.8782				
Total BTEX		5.9282	-		-	
SVOA PAHs List by EPA 8270C	Extracted:	Mar-05-08 14	4:58			
S V OIL I THIS Else by El 71 02 700	Analyzed:	Mar-07-08 15	5:34			
	Units/RL:	mg/L	RL			
Acenaphthene		ND	0.025			
Acenaphthylene		ND	0.025			
Anthracene		ND	0.025			
Benzo(a)anthracene		ND	0.025			
Benzo(a)pyrene		ND	0.025			
Benzo(b)fluoranthene		ND	0.025			
Benzo(k)fluoranthene		ND	0.025			
Benzo(g,h,i)perylene		ND	0.025			
Chrysene		ND	0.025			
Dibenz(a,h)Anthracene		ND	0.025			
Fluoranthene		ND	0.025			
Fluorene		ND	0.025			
Indeno(1,2,3-c,d)Pyrene		ND	0.025			
1-Methylnaphthalene		0.042	0.025			
2-Methylnaphthalene		0.040	0.025			
Naphthalene		0.069	0.025			
Phenanthrene		ND	0.025			
Pyrene		ND	0.025			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi



Project Name: Livingston Ridge - HP Sims

Project Id: 2001-11005

Date Received in Lab:

Mar-03-08 05:00 pm

Contact: Camille Reynolds

Report Date:

10-MAR-08

Project Location:

Project Manager:

nager: Brent Barron, II

	Lab Id:	298800-017		
Analysis Requested	Field Id:	TMW-1		
_	Depth:			
	Matrix:	WATER		
	Sampled:	Feb-29-08 18:50		
TPH By SW8015 Mod	Extracted:	Mar-04-08 15:36		
	Analyzed:	Mar-05-08 16:07		
	Units/RL:	mg/L RI	L	
C6-C12 Gasoline Range Hydrocarbons		16.6 1.	50	
C12-C28 Diesel Range Hydrocarbons		7.06 1.	50	
C28-C35 Oil Range Hydrocarbons		ND 1.	50	
Total TPH		23.66		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi

ZGNCO lobardaries

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(PQL) and above the SQL(MDL).
- 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.
- * Outside XENCO'S scope of NELAC Accreditation

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

Phone Fax (281) 589-0692 11381 Meadowglen Lane Suite L Houston, Tx 77082-2647 (281) 589-0695 9701 Harry Hines Blvd, Dallas, TX 75220 (214) 902 0300 (214) 351-9139 (210) 509-3334 5332 Blackberry Drive, Suite 104, San Antonio, TX 78238 (210) 509-3335 (813) 620-2000 (813) 620-2033 2505 N. Falkenburg Rd., Tampa, FL 33619 (305) 823-8500 (305) 823-8555 5757 NW 158th St, Miami Lakes, FL 33014 6017 Financial Dr., Norcross, GA 30071 (770) 449-8800 (770) 449-5477





Project Name: Livingston Ridge - HP Sims

Work Order #: 298800

Lab Batch #: 716209

Project ID: 2001-11005

Sample: 298800-001 / SMP

Matrix: Water Batch:

Units: mg/L	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes	ļ		[D]					
1,4-Difluorobenzene	0.0342	0.0300	114	80-120				
4-Bromofluorobenzene	0.0345	0.0300	115	80-120				

Lab Batch #: 716209

Sample: 298800-002 / SMP

Batch:

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes	,,,,	(-)	[D]				
1,4-Difluorobenzene	0.0326	0.0300	109	80-120	<u> </u>		
4-Bromofluorobenzene	0.0357	0.0300	119	80-120			

Lab Batch #: 716209

Sample: 298800-003 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
1,4-Difluorobenzene	0.0344	0.0300	115	80-120				
4-Bromofluorobenzene	0.0357	0.0300	119	80-120				

Lab Batch #: 716209

Sample: 298800-004 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
Analytes			[12]					
1,4-Difluorobenzene	0.0329	0.0300	110	80-120				
4-Bromofluorobenzene	0.0346	0.0300	115	80-120				

Lab Batch #: 716209

Sample: 298800-005 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SU	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]	ļ				
1,4-Difluorobenzene	0.0336	0.0300	112	80-120				
4-Bromofluorobenzene	0.0351	0.0300	117	80-120				

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution







Work Order #: 298800

Lab Batch #: 716209

Sample: 298800-006 / SMP

Project ID: 2001-11005

Batch: 1 Matrix: Water

Units: mg/L SURROGATE RECOVERY STUDY Amount True Control BTEX by EPA 8021B **Found** Amount Recovery Limits Flags %R %R [A] [B] [D] **Analytes** 1,4-Difluorobenzene 0.0336 0.0300 112 80-120 4-Bromofluorobenzene 0.0343 0.0300 80-120 114

Lab Batch #: 716209

Sample: 298800-007 / SMP

Batch: 1 Matrix: Water

Units: mg/L	SU	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
1,4-Difluorobenzene	0.0332	0.0300	111	80-120					
4-Bromofluorobenzene .	0.0347	0.0300	116	80-120					

Lab Batch #: 716209

Sample: 298800-008 / SMP

Batch:

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
			[D]	ì		
1,4-Difluorobenzene	0.0335	0.0300	112	80-120		
4-Bromofluorobenzene	0.0340	0.0300	113	80-120		

Lab Batch #: 716209

Sample: 298800-009 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
			[D]			
1,4-Difluorobenzene	0.0331	0.0300	110	80-120		
4-Bromofluorobenzene	0.0346	0.0300	115	80-120		

Lab Batch #: 716209

Sample: 298800-010 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
Analytes 1.4-Diffuorobenzene	0.0330	0.0300	110	80-120		
4-Bromofluorobenzene	0.0351	0.0300	117	80-120		

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A/B

^{***} Poor recoveries due to dilution







Work Order #: 298800

Lab Batch #: 716209

Sample: 298800-010 S / MS

Project ID: 2001-11005

Matrix: Water Batch:

Units: mg/L SURROGATE RECOVERY STUDY Amount True Control BTEX by EPA 8021B Found Amount Recovery Limits Flags [B] %R %R [A] **Analytes** [D] 1,4-Difluorobenzene 0.0343 0.0300 114 80-120 4-Bromofluorobenzene 0.0350 0.0300 117 80-120

Lab Batch #: 716209

Sample: 298800-010 SD / MSD

1 Batch:

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]	:		
1,4-Difluorobenzene	0.0343	0.0300	114	80-120		
4-Bromofluorobenzene	0.0353	0.0300	118	80-120		

Lab Batch #: 716209

Sample: 505449-1-BKS / BKS

Batch:

Matrix: Water

Units: mg/L	SU	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0307	0.0300	102	80-120		
4-Bromofluorobenzene	0.0353	0.0300	118	80-120		

Lab Batch #: 716209

Sample: 505449-1-BLK / BLK

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
			[D]			
1,4-Difluorobenzene	0.0342	0.0300	114	80-120		
4-Bromofluorobenzene	0.0341	0.0300	114	80-120		

Lab Batch #: 716209

Sample: 505449-1-BSD / BSD

Batch: 1

Matrix: Water

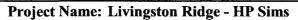
Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0314	0.0300	105	80-120		
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	ļ	

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution







Work Order #: 298800

Lab Batch #: 716371

Sample: 298800-011 / SMP

Project ID: 2001-11005

Batch: 1 Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount {B}	Recovery %R	Control Limits %R	Flags	
			[D]			
1,4-Difluorobenzene	0.0331	0.0300	110	80-120		
4-Bromofluorobenzene	0.0352	0.0300	117	80-120		

Lab Batch #: 716371

Sample: 298800-012 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes		,	[D]			
1,4-Difluorobenzene	0.0330	0.0300	110	80-120		
4-Bromofluorobenzene	0.0350	0.0300	117	80-120		

Lab Batch #: 716371

Sample: 298800-013 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0348	0.0300	116	80-120		
4-Bromofluorobenzene	0.0356	0.0300	119	80-120		

Lab Batch #: 716371

Sample: 298800-014 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			{D}			
1,4-Difluorobenzene	0.0358	0.0300	119	80-120		
4-Bromofluorobenzene	0.0345	0.0300	115	80-120		

Lab Batch #: 716371

Sample: 298800-015 / SMP

Batch: 1

Matrix: Water

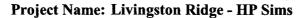
Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0342	0.0300	114	80-120		
4-Bromofluorobenzene	0.0354	0.0300	118	80-120		

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution







Work Order #: 298800

Lab Batch #: 716371

Sample: 298874-001 S / MS

Project ID: 2001-11005

Batch: Matrix: Water

SURROGATE RECOVERY STUDY Units: mg/L Amount True Control BTEX by EPA 8021B Found Recovery Limits Flags Amount **[B]** %R %R [A] [D]**Analytes** 1,4-Difluorobenzene 0.0313 0.0300 104 80-120 4-Bromofluorobenzene 0.0338 0.0300 113 80-120

Lab Batch #: 716371

Sample: 298874-001 SD / MSD

Batch:

1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	1 1	[-,	[D]			
1,4-Difluorobenzene	0.0314	0.0300	105	80-120		
4-Bromofluorobenzene	0.0358	0.0300	119	80-120		

Lab Batch #: 716371

Sample: 505526-1-BKS / BKS

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
Analytes			[12]			
1,4-Difluorobenzene	0.0298	0.0300	99	80-120		
4-Bromofluorobenzene	0.0315	0.0300	105	80-120		

Lab Batch #: 716371

Sample: 505526-1-BLK / BLK

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0328	0.0300	109	80-120		
4-Bromofluorobenzene	0.0327	0.0300	109	80-120		

Lab Batch #: 716371

Sample: 505526-1-BSD / BSD

Batch: 1

Matrix: Water

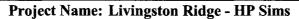
Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0298	0.0300	99	80-120		
4-Bromofluorobenzene	0.0322	0.0300	107	80-120		

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution







Work Order #: 298800

Lab Batch #: 716403

Sample: 298800-017 / SMP

Project ID: 2001-11005

Matrix: Water Batch:

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0339	0.0300	113	80-120		
4-Bromofluorobenzene	0.0360	0.0300	120	80-120		

Lab Batch #: 716403

Sample: 298981-002 S / MS

Batch:

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Diffuorobenzene	0.0314	0.0300	105	80-120		
4-Bromofluorobenzene	0.0361	0.0300	120	80-120		

Lab Batch #: 716403

Sample: 298981-002 SD / MSD

Batch:

Matrix: Water

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

Lab Batch #: 716403

Sample: 505546-1-BKS / BKS

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0314	0.0300	105	80-120		
4-Bromofluorobenzene	0.0352	0.0300	117	80-120		

Lab Batch #: 716403

Sample: 505546-1-BLK / BLK

Batch: 1

Matrix: Water

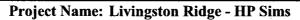
Units: mg/L	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]	i ,			
1,4-Difluorobenzene	0.0333	0.0300	111	80-120			
4-Bromofluorobenzene	0.0359	0.0300	120	80-120			

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution







Work Order #: 298800

Lab Batch #: 716403

Project ID: 2001-11005

Sample: 505546-1-BSD / BSD

Matrix: Water Batch:

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0309	0.0300	103	80-120		
4-Bromofluorobenzene	0.0349	0.0300	116	80-120		

Lab Batch #: 716483

Sample: 298800-001 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
2-Fluorobiphenyl	0.042	0.050	84	43-116		
2-Fluorophenol	0.016	0.050	32	21-100		
Nitrobenzene-d5	0.039	0.050	78	35-114	·-·····	
Phenol-d6	0.009	0.050	18	10-94		
Terphenyl-D14	0.043	0.050	86	33-141		
2,4,6-Tribromophenol	0.047	0.050	94	10-123		

Lab Batch #: 716483

Sample: 298800-002 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
2-Fluorobiphenyl	0.043	0.050	86	43-116		
2-Fluorophenol	0.017	0.050	34	21-100		
Nitrobenzene-d5	0.041	0.050	82	35-114		
Phenol-d6	0.009	0.050	18	10-94		
Terphenyl-D14	0.044	0.050	88	33-141		
2,4,6-Tribromophenol	0.047	0.050	94	10-123		

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution Surrogate Recovery [D] = 100 * A / BAll results are based on MDL and validated for QC purposes.







Work Order #: 298800

Lab Batch #: 716483

Sample: 298800-003 / SMP

Project ID: 2001-11005

Batch: 1 Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
2-Fluorobiphenyl	0.041	0.050	82	43-116		
2-Fluorophenol	0.016	0.050	32	21-100		
Nitrobenzene-d5	0.038	0.050	76	35-114		
Phenol-d6	0.008	0.050	16	10-94		
Terphenyl-D14	0.042	0.050	84	33-141		
2,4,6-Tribromophenol	0.046	0.050	92	10-123		

Lab Batch #: 716483

Sample: 298800-004 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
Analytes			101			
2-Fluorobiphenyl	0.043	0.050	86	43-116		
2-Fluorophenol	0.018	0.050	36	21-100		
Nitrobenzene-d5	0.042	0.050	84	35-114		
Phenol-d6	0.010	0.050	20	10-94		
Terphenyl-D14	0.043	0.050	86 .	33-141		
2,4,6-Tribromophenol	0.048	0.050	96	10-123		

Lab Batch #: 716483

Sample: 298800-005 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
2-Fluorobiphenyl	0.036	0.050	72	43-116		
2-Fluorophenol	0.014	0.050	28	21-100	,	
Nitrobenzene-d5	0.035	0.050	70	35-114		
Phenol-d6	0.008	0.050	16	10-94		
Terphenyl-D14	0.039	0.050	78	33-141		
2,4,6-Tribromophenol	0.038	0.050	76	10-123		

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Livingston Ridge - HP Sims



Work Order #: 298800

Lab Batch #: 716483

Sample: 298800-006 / SMP

Project ID: 2001-11005

Matrix: Water Batch:

Units: mg/L SURROGATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
2-Fluorobiphenyl	0.041	0.050	82	43-116			
2-Fluorophenol	0.018	0.050	36	21-100			
Nitrobenzene-d5	0.038	0.050	76	35-114			
Phenol-d6	0.010	0.050	20	10-94			
Terphenyl-D14	0.042	0.050	84	33-141			
2,4,6-Tribromophenol	0.048	0.050	96	10-123			
1 * *	1	1	1	1			

Lab Batch #: 716483

Sample: 298800-007 / SMP

Batch: 1

Matrix: Water

Units: mg/L SURROGATE RECOVERY STUDY Control Amount True **SVOA PAHs List by EPA 8270C** Recovery Flags Limits Found Amount %R [B] %R [A] [D] **Analytes** 2-Fluorobiphenyl 0.042 0.050 84 43-116 2-Fluorophenol 0.018 0.050 36 21-100 Nitrobenzene-d5 0.039 0.050 78 35-114 Phenol-d6 0.009 0.050 18 10-94 Terphenyl-D14 90 0.045 0.050 33-141 2,4,6-Tribromophenol 0.047 0.050 94 10-123

Lab Batch #: 716483

Sample: 298800-008 / SMP

Batch:

1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	j		[D]			
2-Fluorobiphenyl	0.042	0.050	84	43-116		
2-Fluorophenol	0.018	0.050	36	21-100		
Nitrobenzene-d5	0.041	0.050	82	35-114		
Phenol-d6	0.010	0.050	20	10-94		
Terphenyl-D14	0.044	0.050	88	33-141		
2,4,6-Tribromophenol	0.050	0.050	100	10-123		

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution







Work Order #: 298800

Lab Batch #: 716483

2-Fluorobiphenyl
2-Fluorophenol
Nitrobenzene-d5
Phenol-d6
Terphenyl-D14

Sample: 298800-009 / SMP

Project ID: 2001-11005

Batch: 1 Matrix: Water

0.050

0.050

Units: mg/L

SVOA PAHs List by EPA 8270C

Analytes

SURROGATE RECOVERY STUDY								
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
0.040	0.050	80	43-116					
0.018	0.050	36	21-100					
0.039	0.050	78	35-114					
0.009	0.050	18	10-94					

90

90

33-141

10-123

Lab Batch #: 716483

2,4,6-Tribromophenol

Sample: 298800-010 / SMP

Batch:

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]	l		
2-Fluorobiphenyl	0.041	0.050	82	43-116		
2-Fluorophenol	0.016	0.050	32	21-100		
Nitrobenzene-d5	0.040	0.050	80	35-114		
Phenol-d6	0.009	0.050	18	10-94		
Terphenyl-D14	0.043	0.050	86	33-141	,	
2.4.6-Tribromophenol	0.045	0.050	90	10-123		

0.045

0.045

Lab Batch #: 716483

Sample: 505542-1-BKS / BKS

Batch:

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
2-Fluorobiphenyl	0.045	0.050	90	43-116		
2-Fluorophenol	0.030	0.050	60	21-100		
Nitrobenzene-d5	0.039	0.050	78	35-114		
Phenol-d6	0.020	0.050	40	10-94		
Terphenyl-D14	0.047	0.050	94	33-141		
2,4,6-Tribromophenol	0.050	0.050	100	10-123		

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution







Work Order #: 298800

Lab Batch #: 716483

Sample: 505542-1-BLK / BLK

Project ID: 2001-11005

Matrix: Water Batch:

Units: mg/L	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
2-Fluorobiphenyl	0.049	0.050	98	43-116	···	
2-Fluorophenol	0.031	0.050	62	21-100		
Nitrobenzene-d5	0.041	0.050	82	35-114		
Phenol-d6	0.019	0.050	38	10-94		
Terphenyl-D14	0.055	0.050	110	33-141	·	
2,4,6-Tribromophenol	0.055	0.050	110	10-123		

Lab Batch #: 716483

Sample: 505542-1-BSD / BSD

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
2-Fluorobiphenyl	0.046	0.050	92	43-116		
2-Fluorophenol	0.030	0.050	60	21-100		
Nitrobenzene-d5	0.040	0.050	. 80	35-114		
Phenol-d6	0.020	0.050	40	10-94	-	
Terphenyl-D14	0.049	0.050	98	33-141		
2,4,6-Tribromophenol	0.051	0.050	102	10-123		

Lab Batch #: 716527

Sample: 298800-011 / SMP

Batch:

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
2-Fluorobiphenyl	0.043	0.050	86	43-116		
2-Fluorophenol	0.018	0.050	36	21-100		
Nitrobenzene-d5	0.037	0.050	74	35-114		
Phenol-d6	0.009	0.050	18	10-94		
Terphenyl-D14	0.050	0.050	100	33-141		
2,4,6-Tribromophenol	0.045	0.050	90	10-123		

Surrogate Recovery [D] $\approx 100 * A/B$

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: Livingston Ridge - HP Sims



Work Order #: 298800

Lab Batch #: 716527

Sample: 298800-012 / SMP

Project ID: 2001-11005

Batch: 1 Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C Analytes	Amount Found [A]	True Amount {B}	Recovery %R [D]	Control Limits %R	Flags	
2-Fluorobiphenyl	0.041	0.050	82	43-116		
2-Fluorophenol	0.016	0.050	32	21-100		
Nitrobenzene-d5	0.039	0.050	78	35-114		
Phenol-d6	0.009	0.050	18	10-94		
Terphenyl-D14	0.044	0.050	88	33-141		
2,4,6-Tribromophenol	0.044	0.050	88	10-123		

Lab Batch #: 716527

Sample: 298800-013 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
2-Fluorobiphenyl	0.042	0.050	84	43-116		
2-Fluorophenol	0.017	0.050	34	21-100		
Nitrobenzene-d5	0.038	0.050	76	35-114		
Phenol-d6	0.010	0.050	20	10-94		
Terphenyl-D14	0.042	0.050	84	33-141		
2,4,6-Tribromophenol	0.054	0.050	108	10-123		

Lab Batch #: 716527

Sample: 298800-014 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
2-Fluorobiphenyl	0.044	0.050	88	43-116		
2-Fluorophenol	0.019	0.050	38	21-100	· · · · · · · · · · · · · · · · · · ·	
Nitrobenzene-d5	0.041	0.050	82	35-114		
Phenol-d6	0.010	0.050	20	10-94		
Terphenyl-D14	0.046	0.050	92	33-141		
2,4,6-Tribromophenol	0.056	0.050	112	10-123		

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution







Work Order #: 298800

Lab Batch #: 716527

Sample: 298800-015 / SMP

Project ID: 2001-11005

Matrix: Water Batch: 1

Units: mg/L	SU	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
2-Fluorobiphenyl	0.040	0.050	80	43-116			
2-Fluorophenol	0.015	0.050	30	21-100			
Nitrobenzene-d5	0.038	0.050	76	35-114			
Phenol-d6	0.009	0.050	18	10-94	- 11 111		
Terphenyl-D14	0.042	0.050	84	33-141			
2,4,6-Tribromophenol	0.038	0.050	76	10-123			

Lab Batch #: 716527

Sample: 298800-017 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY						
SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
Analytes			1-7				
2-Fluorobiphenyl	0.041	0.050	82	43-116			
2-Fluorophenol	0.021	0.050	42	21-100			
Nitrobenzene-d5	0.033	0.050	66	35-114	-		
Phenol-d6	0.010	0.050	20	10-94			
Terphenyl-D14	0.039	0.050	78	33-141			
2,4,6-Tribromophenol	0.055	0.050	110	10-123			

Lab Batch #: 716527

Sample: 505543-1-BKS / BKS

Batch: 1

Matrix: Water

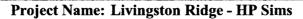
Units: mg/L	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
2-Fluorobiphenyl	0.042	0.050	84	43-116		
2-Fluorophenol	0.027	0.050	54	21-100		
Nitrobenzene-d5	0.040	0.050	80	35-114		
Phenol-d6	0.018	0.050	36	10-94		
Terphenyl-D14	0.046	0.050	92	33-141		
2,4,6-Tribromophenol	0.048	0.050	96	10-123		

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution







Work Order #: 298800

Lab Batch #: 716527

Sample: 505543-1-BLK / BLK

Project ID: 2001-11005

Matrix: Water Batch:

Units: mg/L	SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
2-Fluorobiphenyl	0.043	0.050	86	43-116		
2-Fluorophenol	0.026	0.050	52	21-100		
Nitrobenzene-d5	0.041	0.050	82	35-114		
Phenol-d6	0.016	0.050	32	10-94		
Terphenyl-D14	0.048	0.050	96	33-141		
2,4,6-Tribromophenol	0.044	0.050	88	10-123		

Lab Batch #: 716527

Sample: 505543-1-BSD / BSD

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY						
SVOA PAHs List by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
2-Fluorobiphenyl	0.044	0.050	88	43-116			
2-Fluorophenol	0.028	0.050	56	21-100			
Nitrobenzene-d5	0.042	0.050	84	35-114			
Phenol-d6	0.019	0.050	38	10-94			
Terphenyl-D14	0.046	0.050	92	33-141			
2,4,6-Tribromophenol	0.048	0.050	96	10-123			

Lab Batch #: 716244

Sample: 298799-002 S / MS

Batch: 1

Matrix: Water

Units: mg/L	SU	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1-Chlorooctane	11.9	10.0	119	70-135			
o-Terphenyl	6.23	5.00	125	70-135			

Lab Batch #: 716244

Sample: 298800-001 / SMP

Batch: 1

Matrix: Water

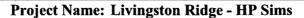
Units: mg/L	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1-Chlorooctane	9.52	10.0	95	70-135		
o-Terphenyl	5.21	5.00	104	70-135	i	

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution







Work Order #: 298800

Lab Batch #: 716244

Sample: 298800-002 / SMP

Project ID: 2001-11005

Batch: 1 Matrix: Water

SURROGATE RECOVERY STUDY Units: mg/L Control TPH By SW8015 Mod Recovery Flags Limits Found Amount [A] [B] %R %R [D] **Analytes** 1-Chlorooctane 10.0 10.0 100 70-135 o-Terphenyl 5.44 5.00 109 70-135

Lab Batch #: 716244

Sample: 298800-003 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1-Chlorooctane	10.0	10.0	100	70-135		
o-Terphenyl	5.49	5.00	110	70-135		

Lab Batch #: 716244

Sample: 298800-004 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D] ·	-		
1-Chlorooctane	9.81	10.0	98	70-135		
o-Terphenyl	5.42	5.00	108	70-135		

Lab Batch #: 716244

Sample: 298800-005 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1-Chlorooctane	10.0	10.0	100	70-135			
o-Terphenyl	5.48	5.00	110	70-135			

Lab Batch #: 716244

Sample: 298800-006 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R D	Control Limits %R	Flags	
1-Chlorooctane	9.74	10.0	97	70-135		
o-Terphenyl	5.36	5.00	107	70-135	-	

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution





Project Name: Livingston Ridge - HP Sims

Work Order #: 298800

Lab Batch #: 716244

Sample: 298800-007 / SMP

Project ID: 2001-11005

Batch: Matrix: Water

SURROGATE RECOVERY STUDY Units: mg/L Amount Control **TPH By SW8015 Mod** Recovery Flags Limits Found Amount [A] [B] %R %R [D]**Analytes** 1-Chlorooctane 9.92 10.0 99 70-135 o-Terphenyl 5.38 5.00 108 70-135

Lab Batch #: 716244

Sample: 298800-008 / SMP

Batch:

1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1-Chlorooctane	9.50	10.0	95	70-135		
o-Terphenyl	5.17	5.00	103	70-135		

Lab Batch #: 716244

Sample: 298800-009 / SMP

Batch:

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1-Chlorooctane	10.1	10.0	101	70-135		
o-Terphenyl	5.45	5.00	109	70-135	·	

Lab Batch #: 716244

Sample: 298800-010 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found {A}	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1-Chlorooctane	10.7	10.0	107	70-135		
o-Terphenyl	5.72	5.00	114	70-135		

Lab Batch #: 716244

Sample: 505473-1-BKS / BKS

Batch: 1

Matrix: Water

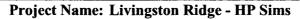
Units: mg/L	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	11.4	10.0	114	70-135		
o-Terphenyl	5.97	5.00	119	70-135		

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution







Work Order #: 298800

Lab Batch #: 716244

Sample: 505473-1-BLK / BLK

Project ID: 2001-11005

1 Matrix: Water Batch:

Units: mg/L	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	9.51	10.0	95	70-135		
o-Terphenyl	5.17	5.00	103	70-135		

Lab Batch #: 716244

Sample: 505473-1-BSD / BSD

Batch: 1

Matrix: Water

Units: mg/L	SU	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1-Chlorooctane	11.2	10.0	112	70-135			
o-Terphenyl	5.82	5.00	116	70-135			

Lab Batch #: 716389

Sample: 298800-011 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SU	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	10.1	10.0	101	70-135	<u> </u>		
o-Terphenyl	5.48	5.00	110	70-135			

Lab Batch #: 716389

Sample: 298800-011 S / MS

Batch: 1

Matrix: Water

Units: mg/L	SU	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1-Chlorooctane	11.6	10.0	116	70-135			
o-Terphenyl	5.96	5.00	119	70-135			

Lab Batch #: 716389

Sample: 298800-012 / SMP

Batch: 1

Matrix: Water

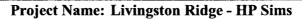
Units: mg/L	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	10.2	10.0	102	70-135	
o-Terphenyl	5,49	5.00	110	70-135	

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution







Work Order #: 298800

Lab Batch #: 716389

Sample: 298800-013 / SMP

Project ID: 2001-11005

Matrix: Water Batch:

Units: mg/L SURROGATE RECOVERY STUDY Amount True TPH By SW8015 Mod Flags Found Amount Recovery Limits [B] %R %R [A][D] **Analytes** 1-Chlorooctane 10.1 10.0 101 70-135 o-Terphenyl 5.45 5.00 109 70-135

Lab Batch #: 716389

Sample: 298800-014 / SMP

Batch:

1

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY S	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	10.1	10.0	101	70-135	
o-Terphenyl	5.42	5.00	108	70-135	

Lab Batch #: 716389

Sample: 298800-015 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY S	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.2	10.0	102	70-135	
o-Terphenyl	5.55	5.00	111	70-135	

Lab Batch #: 716389

Sample: 298800-016 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	10,0	10.0	100	70-135	
o-Terphenyl	5.44	5.00	109	70-135	

Lab Batch #: 716389

Sample: 298800-017 / SMP

Batch: 1

Matrix: Water

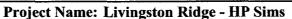
Units: mg/L	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.2	10.0	102	70-135	
o-Terphenyl	5.52	5.00	110	70-135	

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution







Work Order #: 298800

Project ID: 2001-11005

Lab Batch #: 716389

Sample: 505541-1-BKS / BKS

Matrix: Water Batch:

Units: mg/L	SU	RROGATE R	ECOVERY S	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	,,		[D]		
1-Chlorooctane	11.3	10.0	113	70-135	
o-Terphenyl	5.93	5.00	119	70-135	

Lab Batch #: 716389

Sample: 505541-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	9.64	10.0	96	70-135	
o-Terphenyl	5.23	5.00	105	70-135	-

Lab Batch #: 716389

Sample: 505541-1-BSD / BSD

Batch: 1

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY S	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	11.3	10.0	113	70-135	
o-Terphenyl	6.20	5.00	124	70-135	

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



and a

and comments

1



Project Name: Livingston Ridge - HP Sims

Work Order #: 298800

Analyst: SHE

Sample: 505449-1-BKS

Date Prepared: 03/04/2008

Batch #: 1

Project ID: 2001-11005 Date Analyzed: 03/04/2008

Matrix: Water

Lab Batch ID: 716209

Units: mg/L		BLAN	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	PIKE / B	LANKS	PIKE DUPL	ICATE 1	RECOVE	RY STUD	Y	
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	,	<u>B</u>	<u>D</u>	<u>a</u>	(E)	Result [F]	[6]				
Benzene	QN	0.1000	9980'0	87	0.1	0.0881	88	2	70-125	25	
Toluene	QX	0.1000	0.0888	68	0.1	0.0878	88	1	70-125	25	
Ethylbenzene	Ð	0.1000	0.0949	95	0.1	9680'0	06	9	71-129	25	
m,p-Xylenes	QV	0.2000	0.1921	96	0.2	0.1787	68	7	70-131	25	
o-Xylene	Q	0.1000	0.1033	103	0.1	0.0957	96	8	71-133	25	

Analyst: SHE

Lab Batch ID: 716371

Date Prepared: 03/05/2008

Sample: 505526-1-BKS

Batch #: 1

Date Analyzed: 03/05/2008 Matrix: Water

Flag Control Limits %RPD 25 25 25 25 25 BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Control Limits %R 70-125 70-125 71-129 70-131 71-133 RPD % 4 Blk. Spk Dup. |G| 115 114 117 116 119 Spike Duplicate Result [F] 0.1146 0.2319 0.1193 0.1141 Blank 0.1171 Spike Added 0.1 0.2 国 0.1 0.1 0.1 Blank Spike %R 110 117 113 112 110 <u>a</u> 0.1166 Blank Spike Result 0.1099 0.2238 0.1097 0.1131 $\overline{\Omega}$ 0.1000 0.1000 0.1000 0.1000 0.2000 Spike Added <u>B</u> Blank Sample Result Ð Ð B $\overline{\mathbf{A}}$ 2 B BTEX by EPA 8021B Units: mg/L Analytes Ethylbenzene m,p-Xylenes o-Xylene Benzene Toluene

Blank Spike Recovery [D] = $100^{4}(\text{C})/[\text{B}]$ Blank Spike Duplicate Recovery [G]] = $100^{4}(\text{F})/[\text{E}]$ All results are based on MDL and Validated for QC Purposes Relative Percent Difference RPD = 200*[(D-F)/(D+F)]





Project Name: Livingston Ridge - HP Sims

Work Order #: 298800

Analyst: SHE

Lab Batch ID: 716403

Sample: 505546-1-BKS

Date Prepared: 03/06/2008

Batch #: 1

Project ID: 2001-11005 **Date Analyzed:** 03/06/2008

Matrix: Water

Units: mg/L		BLAN	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	PIKE / B	LANKS	PIKE DUPL	ICATE 1	RECOVE	RY STUD	Y	
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[0]	[E]	Result [F]	[6]				
Benzene	QN	0.1000	0.0933	66	0.1	0.0919	92	2	70-125	25	
Toluene	QN	0.1000	0.0948	95	0.1	0.0932	66	2	70-125	25	
Ethylbenzene	ND	0.1000	0.1002	100	0.1	0.0978	86	2	71-129	25	
m,p-Xylenes	QN	0.2000	0.2002	100	0.2	0.1953	86	2	70-131	25	
o-Xylene	QX	0.1000	0.1075	108	0.1	0.1049	105	2	71-133	25	



, 4: 7

10%



Project Name: Livingston Ridge - HP Sims

Work Order #: 298800

Analyst: KRB

Lab Batch ID: 716483

Sample: 505542-1-BKS

Date Prepared: 03/05/2008

Batch #: 1

Project ID: 2001-11005 **Date Analyzed:** 03/06/2008

Matrix: Water

Units: mg/L		BLAN	K/BLANK	SPIKE / E	3LANK S	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	ICATE	RECOVE	RY STUD	X.	
SVOA PAHs List by EPA 8270C	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	BIk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[<u>8</u>	<u>[]</u>	<u>a</u>	(E)	Result [F]	[6]				
Acenaphthene	QN	0.050	0.047	94	0.05	0.047	94	0	54-114	25	
Acenaphthylene	ΩN	0.050	0.046	92	0.05	0.046	92	0	53-113	25	
Anthracene	QN	0.050	0.046	92	0.05	0.047	94	2	56-116	25	
Benzo(a)anthracene	ΩN	0.050	0.047	94	0.05	0.048	96	2	59-116	25	
Benzo(a)pyrene	Q.	0.050	0.046	92	0.05	0.048	96	4	58-118	25	
Benzo(b)fluoranthene	ÓΝ	0.050	0.047	94	0.05	0.049	86	4	54-123	25	
Benzo(k)fluoranthene	ΩÑ	0.050	0.046	92	0.05	0.049	86	9	52-122	25	
Benzo(g,h,i)perylene	Ω̈́	0.050	0.048	96	0.05	0.048	96	0	47-129	25	
Chrysene	S	0.050	0.048	96	0.05	0.048	96	0	58-116	25	
Dibenz(a,h)Anthracene	Q	0.050	0.049	86	0.05	0.051	102	4	46-131	25	
Fluoranthene	QN	0.050	0.051	102	0.05	0.052	104	7	55-120	25	
Fluorene	ON	0.050	0.047	94	0.05	0.047	94	0	56-114	25	
Indeno(1,2,3-c,d)Pyrene	Ď	0.050	0.048	96	0.05	0.051	102	9	44-132	25	
I-Methylnaphthalene	QN	0.050	0.044	88	0.05	0.045	06	7	47-113	25	
2-Methylnaphthalene	QN.	0.050	0.048	96	0.05	0.049	86	7	27-106	25	
Naphthalene	QN	0.050	0.044	88	0.05	0.044	88	0	53-110	25	
Phenanthrene	QN	0.050	0.048	96	0.05	0.049	86	7	56-116	25	
Pyrene	Q	0.050	0.045	8	0.05	0.047	94	4	611-25	25	

Relative Percent Difference RPD = 200*(D-F)/(D+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



4

5, #

- all a



Project Name: Livingston Ridge - HP Sims

Work Order #: 298800

Analyst: TTD

Lab Batch ID: 716527

Sample: 505543-1-BKS

Date Prepared: 03/05/2008

Batch #: 1

Project ID: 2001-11005 **Date Analyzed:** 03/07/2008

Matrix: Water

Units: mg/L		BLAN	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	PIKE / E	LANKS	PIKE DUPI	ICATE F	RECOVE	RY STUD	Y	
SVOA PAHs List by EPA 8270C	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Bik. Spk Dup. %R [G]	RPD	Control Limits %R	Control Limits %RPD	Flag
Acenaphthene	QN	0.050	0.042	84	0.05	0.044	88	5	54-114	25	
Acenaphthylene	Q.	0.050	0.041	82	0.05	0.043	98	5	53-113	25	
Anthracene	QN	0.050	0.042	84	0.05	0.043	98	2	56-116	25	
Benzo(a)anthracene	Q.	0.050	0.044	88	0.05	0.045	06	2	59-116	25	
Benzo(a)pyrene	Q.	0.050	0.046	92	0.05	0.047	25	2	58-118	25	
Benzo(b)fluoranthene	QN.	0.050	0.051	102	0.05	0.052	104	2	54-123	25	
Benzo(k)fluoranthene	QN.	0.050	0.051	102	0.05	0.053	106	4	52-122	25	
Benzo(g,h,i)perylene	QN	0.050	0.025	20	0.05	0.026	52	4	47-129	25	
Chrysene	QN	0.050	0.045	06	0.05	0.046	92	2	58-116	25	
Dibenz(a,h)Anthracene	Q	0.050	0.031	62	0.05	0.032	64	3	46-131	25	
Fluoranthene	QN	0.050	0.046	92	0.05	0.047	94	2	55-120	25	
Fluorene	ΩN	0.050	0.045	8	0.05	0.046	92	2	56-114	25	
Indeno(1,2,3-c,d)Pyrene	QN	0.050	0.029	28	0.05	0.030	09	3	44-132	25	
1-Methylnaphthalene	ΩN	0.050	0.043	98	0.05	0.045	06	5	47-113	25	
2-Methylnaphthalene	Ð	0.050	0.048	96	0.05	0.049	86	2	57-106	25	
Naphthalene	QN	0.050	0.041	82	0.05	0.043	98	5	53-110	25	
Phenanthrene	QN	0.050	0.044	88	0.05	0.045	90	2	56-116	25	
Pyrene	QN	0.050	0.045	06	0.05	0.046	92	2	57-119	25	

Relative Percent Difference RPD = 200*(D-F)/(D+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



4

3

A. 4. A.

9

A supply



Project Name: Livingston Ridge - HP Sims

Work Order #: 298800

Analyst: SHE

Date Prepared: 03/04/2008

Project ID: 2001-11005 Date Analyzed: 03/04/2008

Matrix: Water

Flag

Batch #: 1 Sample: 505473-1-BKS Lab Batch ID: 716244

Control Limits %RPD 25 BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Control Limits %R 70-135 70-135 RPD Blk. Spk Dup. [G] 95 16 Blank Spike Duplicate Result [F] 96.5 95.2 Spike Added 囯 100 8 Blank Spike %R [D] 8 8 Blank Spike Result [C] 94.3 96.1 Spike Added 100 100 <u>8</u> Blank Sample Result 9 9 <u>v</u> TPH By SW8015 Mod C6-C12 Gasoline Range Hydrocarbons C12-C28 Diesel Range Hydrocarbons Units: mg/L Analytes

Analyst: SHE

Date Prepared: 03/04/2008

Date Analyzed: 03/05/2008 Matrix: Water

Batch #: 1 Sample: 505541-1-BKS Lab Batch ID: 716389

Units: mg/L		BLAN	BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	PIKE / B	LANKS	PIKE DUPI	ICATE F	ECOVE	RY STUD	Y	
TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[0]	[E]	Result [F]	[5]				
C6-C12 Gasoline Range Hydrocarbons	ND	100	92.6	. 96	100	94.1	94	2	70-135	25	
C12-C28 Diesel Range Hydrocarbons	QN	100	6.7	26	100	94.8	95	2	70-135	25	

Relative Percent Difference RPD = 200*(D-F)/(D+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 Recoveries

Project Name: Livingston Ridge - HP Sims



Work Order #: 298800

Lab Batch #: 716244

Date Analyzed: 03/05/2008

Project ID: 2001-11005

Date Prepared: 03/04/2008

Analyst: SHE

QC- Sample ID: 298799-002 S Batch #:

Water Matrix:

Reporting Units: mg/L	MATI	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
TPH by SW8015 Mod	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes	[A]	[B]				
C6-C12 Gasoline Range Hydrocarbons	ND	100	93.7	94	70-135	
C12-C28 Diesel Range Hydrocarbons	ND	100	95.2	95	70-135	

Lab Batch #: 716389

Date Analyzed: 03/05/2008

Date Prepared: 03/04/2008

Analyst: SHE

QC- Sample ID: 298800-011 S

Batch #:

Matrix: Water

MAII	KIX / MIA	I KIX SPIKE	RECO	VERY SIU	VΥ
Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
[A]	[B]				
ND	100	92.4	92	70-135	
ND	100	93.0	93	70-135	
	Parent Sample Result [A]	Parent Sample Result Added [A] ND 100	Parent Sample Result [A] ND Spike Result [C] Result [B] Spiked Sample Result [C] Result [O] 92.4	Parent Sample Result [A] ND Spike Result Added [B] Spiked Sample Result [C] [D] [D]	Sample Spike Result %R Limits %R

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

All Results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: Livingston Ridge - HP Sims

Work Order #: 298800

Lab Batch ID: 716209

Date Analyzed: 03/05/2008

Project ID: 2001-11005

Matrix: Water

SHE Batch #: Analyst:

QC-Sample ID: 298800-010 S

Date Prepared: 03/04/2008

Reporting Units: mg/L		W	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	/MAT	RIX SPII	KE DUPLICAT	FE REC	OVERY S	STUDY		
BTEX by EPA 8021B	Parent Sample		Spiked Sample Result	Spiked Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	<u>.</u>	%R [D]	Added [E]	Result [F]	<u>5</u>	%	%R	%RPD	
Benzene	QX	0.1000	0.0879	88	0.1000	0.0895	06	2	70-125	25	
Toluene	QN.	0.1000	0.0893	68	0.1000	0.0915	92	3	70-125	25	
Ethylbenzene	ΩN	0.1000	0.0944	94	0.1000	0.0971	. 26	3	71-129	25	
m,p-Xylenes	QN	0.2000	0.1861	93	0.2000	0.1918	96	3	161-07	25	
o-Xylene	QN	0.1000	8/60.0	86	0.1000	0.1006	101	3	71-133	25	

Date Analyzed: 03/05/2008 Lab Batch ID: 716371

Analyst: QC-Sample ID: 298874-001 S Date Prepared: 03/05/2008

Matrix: Water SHE Batch #:

Date Charles of of 20 200	in and it can be					!					
Reporting Units: mg/L		M	ATRIX SPIK	:/MAT	RIX SPII	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	TE REC	VERY S	TUDY		
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result Sample [C] %R	Spiked Sample %R [D]		Spike Spiked Sample Added Result [F]	Spiked Dup. %R [G]	RPD	Control Limits %R	Control Limits %RPD	Flag
Benzene	QN	0.1000	0.0844	48	0.1000	0.0811	81	4	70-125	25	
Toluene	QN	0.1000	0.0850	88	0.1000	0.0826	83	2	70-125	25	
Ethylbenzene	QN	0.1000	0.0882	88	0.1000	0.0881	88	0	71-129	25	
m,p-Xylenes	QN	0.2000	0.1732	87	0.2000	0.1728	98	1	70-131	25	
o-Xvlene	S	0.1000	0.0908	91	0.1000	0.0911	91	0	71-133	25	

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

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 - HP Sims

Work Order #: 298800

Lab Batch ID: 716403

QC-Sample ID: 298981-002 S Date Prepared: 03/06/2008

Batch #:

Matrix: Water SHE Analyst:

Project ID: 2001-11005

Date Analyzed: 03/06/2008

eporting Units: mg/L		M	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	/MAT	RIX SPIR	Œ DUPLICAT	TE REC	VERY S	TUDY		
BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	pike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C] %R A	[0]	dded [E]	Result [F]	% [5]	%	%R	%RPD	
Benzene	QN	0.1000	0.0837	84	0.1000	0.0848	85	1	70-125	25	
Toluene	QN	0.1000	0.0856	98	0.1000	0.0861	98	0	70-125	25	
Ethylbenzene	S.	0.1000	0.0921	92	0.1000	0.0910	91	1	71-129	25	
m,p-Xylenes	QN	0.2000	0.1813	91	0.2000	0.1789	68	2	70-131	25	
o-Xylene	QN	0.1000	2960'0	16	0.1000	0.0948	95	7	71-133	25	

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

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

								× 1			Man of the last	i	
										ANALYSIS	//// si	/////	Lab use only
	Q		Ĺ			Laboratory: £ 20	107			REQUESTED	STED / / /		
■ 3		Engine	Ję	Consulting Engineers & Scientists	Address:	:88					/ / / /		Temp. of coolers when received (C*): '4, C
8 6	Location	Office Location (Nid land	B		Contact	븅							7
					Phone:								Page /
Projec	t Manag	Project Manager Cotylysting	KEL	order of	10 PO/SO#:	1 1	2001-1005	500		(W	/ / JOJE		
Sample	Sampler's Name				Sempk	Semplor's Signature				\$7	117	_	
	J	Chris Ands	7	S		ĺ	1		1	08	/ /ss/cs/		
4 4 4 4	1		Project .	Project Name	į		ļ	No/Type of Containers	Thiness	_3	/ / / *		
	4 00 LL01- H	88	Ĺ	L. T. Mastan	17 17	1.0xe . HP	2 2 2		ł	47 71		_	ってのから
Matrix	a de	Ĕ)oEo	2 and	Identifying Marks of Sample(s)	mple(s) final?	Depth	ð å=	85.E	ઇ		<u></u>	Lab Sample ID (Lab Use Only)
3	र्था १०६	1133		×	71-34			7,		X X			19 -
		1133		J.	11-MW						À		-
	_),pQ			M6-13			4		R R			301
		1304			MW-13	3		_					-
		1233			41-72	1		1 1		8 1			50-
		454			41-MM	7		-					1
		المحح			1-mw			4		メス			T-1
		3581			MM-14			1					`
		ሳሮፍ ነ	_	۷	21-MM			4		RR			Ch.
4	-	3%	Ï		6						8		1
Turn en	Turn around time	A Normal	쿌	O 28% Push	ı	Rush	O 100% Rush						
Reling	Tage of the same o	Relinquistrad by (Signature)	\setminus	**	- 12 Jan	Received by: (Signature)	y: (Signatu	ê	8	Date: Tir	Time: NOTES:	4	
Reting	(d peuts)	Retinquished by (Signature)		eg G	Hine:	Received by: (Signature)	y: (Signatu	ê	Date:	_	Time: (arvi)/8 Kg	501015	Canille Keynolds W/ Plains
Reling) kg peusi	Reinquished by (Signature)		Date:	Time:	Received by: (Signature)	y. (Signatu	(£ 2	Date	te: Time:	.ee:		
Relinqu) kg peqsi	Relinquished by (Signature)		Date:	Time	Received by: (Signature)	y: (Signatu	\$2°	18 €	2/3/63 17 US	Time: Vi / KNOCK > E	580/5	10
Matrix Container	•	VVW - Westewater VOA - 40 ml viel		W - Wate A/G - Ami	W - Water S - Soil SD - Soild A/G - Amber / Or Glass 1 Liter	SD-Solid	L - Liquida 250 ml - 6	L - Liquid A - Air Bag 250 ml - Glass wide mouth	1	C - Charcoel tube P/O - Plastic or other	ಶ		l
Houston Office 11555 Cay Ros Houston, Texas	Office by Road, Sur Texas 77043	Houseon Office 11555 Cay Road, Suite 100 Houseon, Texas 77043	,	388	Deflet Office 8901 Carpenter Precway, Suite 100 Deflet, Taxes 75347	way, Suite 100		Port Worth Office 2601 Gravel Drive Fort Worth, Texas 76118	five rive 1192		Austin Office 5307 Industrial Outs Blvd. # 160 Austin, Texas 78735	d. # 160	Midhand Office 24 Smith Rd., # 261 Midhad, Texas 79705
3 69	0-8989 Pax	(713) 690-878		Ž	4) 630-1010 Pag	(214) 630-7070		(817) 268-800	ž	7008-907 (1	(\$12) 442 1122 Hex (\$1	2) 442-1181	(432) 634-9600 Fex (432) 684-

		ENV	RON	- BAVİRONMENTAL, GEOTECHAICALAND CONSTRUCȚION MATBRIALS SERMIÇES	GLOTECH	INICAL	GNW	CONS	PRUCT	TIONS	MĄŤÉŅ	IALS SE	RVICES			CHAIR	N OF CUST	CHAIN OF CUSTODY RECORD
					-						×	ANALYSIS	_		-	111	1997	Lab use only
			į		Labora	Laboratory: £40T	510	+			nc	REQUESTED	/ / 03	_	_	_	Doe Date:	Date:
	Ü		Ũ	6	Address:								_	_		_	Temp.	Temp. of coolers
_	Consultin	Consulting Engineers & Scientists	8	Scientists							1		_	_	_		when	(0)
9	e Location	Office Location Mid land	و		Contact:	#					1		_	_	_	_		9 4 8
					Phone:		Ì					7	7	_	_	_	/ Page	7 0 4
P	oct Manag	Mer Cath	41,7	Project Manager Cathering London			-	3001-100Z	10		1	W	(29) (21)	_	_	_	_	
S	Sampler's Name					Sampler's Signature	ę		\		_	S)	19.	_	_			
	3	Chris Aulds	105		•		4	N		1		08.	2)	_	_			
P. P.	3		Project Name	Neme	-	7	1	۲.	Mo/Type of Containers	Contain	ş	¥d 31	_ H¥	_	_	_		
	H 400LLOUS	908		Lington Ridge - HP Sims	الأركاد	늬	۲	٦			1	શે	ੈ ਰਿ	_	_	_	SXXXX	
Matrix	\$	a a	O-E	Conditying	Identifying Marks of Semple(s)	Tolo(s)	histed htsped		Ø ₹	81	£	_	_	_		_	Lab Semple II	(Vinc) (Lab Use Only)
3	80157	Hys	H	3	mw-10		\vdash	4			X	R					١	- Ce
L		N95		7	01-mw							<u>م</u>					-	
E		17/17/		2	5-MW		-	17			٨	X					V	-01
L		اداداره			MM-3		H		_									
		1506	\vdash		MW-J			-	1,	Ц	×	×					٦.	-nç
		1506		٤	ו-ישש				_			<u>مر</u>						
		15-13			M6-2		-	7	7		א	79					Υ	-04
		1543	F		MM-A							8						
	_	1607			p-mm		-	-	7		8	18					2	0
世	4	3		1	537	K	_					R						
Ē	Turn eround time	Dr Hommel	E	O 25% Plush	h C) 50% Rush		C 100% Rush	Rush										
돌	alstocto.	Reinquished by (Signature)	. 1	Note:	Time:	Received by: (Signature)	d by: (S	gnature	<u>~</u>		Date:	Time	<u>Ş</u>	έó				
	Relinquished by (Signature)	(Bigmenture)		Darke:	Time:	Received by: (Signature)	d by: (S	gnature	-		Date:	Tage	T	ZW.	ن	ey no los	Camille Reynolds W/Plains	iènS
튵	Relinquished by (Signature)	(Signature)		Date:	Time:	Received by: (Signature)	S) :Ág Þ	Quatring		T	Date:	Time:	T					
R P	Reinquished by (Signature)	(Signature)		Date:	Time;	Received by: (Signature)	de S	2 Parting	2		\$ C	13/62 (760	Τ	WITHOUS & SUNS	~4.7 ~6.7	Stells		
Matrix	l	WW - Wasteweter VOA - 40 m3 vial		W - Water A/G - Ambr	W - Water S - Soll SD - Solid A/G - Amber / Or Glass 1 Liter	SS - Solk	•	L - Liquid A - Air Bag 250 ml - Glass wide mouth	A - Atr	B ge	0 E	C - Charcoel tube P/O - Plastic or other	St studge		5 0			
House House	Houston Office 11535 Clay Road, Su Houston, Texas 7704 7131, 440-16990 Fee	Houston Office 11535 Cay Road, Suite 100 Houston, Totals 77043 7731 6501 800 80 7713 690-8787	١,	Patter Patter Patter (214)	Dallas Office 8901 Carpetter Frzewsy, Suite 100 Dallas, Texas 75247 (214) 630-1010 Fax (214) 630-7070	ray, Suite 10	8 8	~~~	Fort Word (50) Grav (ort Worth	d Drive	Fort Worth Office 2601 Gravel Drive Fort Worth, Texas 76118 (817) 268-8600 Fax (817) 265-8602	F-8602	Aust 5307 Austi (512)	Austin Office 5307 Industrial Oaks Blvd. # 160 Austin, Texas 78735 (512) 442-1122 Pax (512) 442-1181	15 Blvd. # 5 1x (512) 44	160	Midland Office 24 Smith Rd., 8 Midland. Texas (432) 684-9600	Midland Office 24 Smith Rd., # 261 Midland, Texas 79705 (432) 684-9600 Pax (432) 684-9608
	Den an	100																

	EN	Ç.XII.A	NATERITAL	SEOTES.	HNICAL	ONV	CONS	J. K.C.	Ó	MAT	ŦŊVIŖŎĸŊŒŊŢŊĿĢĠŶŦŦĊĦŊſĊĄĿĄŊŖĢŊĸŶŤŖŮĊŦĬŶĸĄĸŢŔĦŊĿŚ ŚŖŔŶſĘŔŚ	VICES		CHA	CHAIN OF CUSTODY RECORD	Y RECORD
l.			i	Labor	aboratory:	E LOT	to				ANALYSIS REQUESTED	//		////	Lab use only Due Date:	Ą
	COURTE FINANCE STATES	Ųį			:ss										Temp. of coolers	Temp. of coolers when received (C*): 3.
Office Location (Nid/and	A Midk	P		Contact	ts]		_	_		1 2	9 6
				Phone:							_	_	_		7	7 6
Project Manager Cot hat i 1.9	ager Cash	Pati	he London	PO/SO#:	1 11	1000	- 110	11005			(
Sampler's Name				Sempl	Sampler's Signature	2		\			(8) W	\sqrt{x}	_	_	_	
Chis	Chris Ands	۸,		u)	1			1	\es \si	7 0	_			
Proj. No.	9.6		Project Neme		7 4 11		-	8	No/Type of Containers	green;		~	_	_		
H4011008	gg	ī	L'inston		Kigger Hr Jims	탉	+	\mathbf{I}	ŀ	Ţ	#/#/	_	_		30000 v	-
Matrix Date	em.)oEa	2-ac	identifying Marks of Sampte(s)		Stert Depth End	End Depth	₹- §	왕	28 28 28	11/2/2/ 12/2/		_		Lab Sample ID (Lab Use Only)	, Use Omly)
BAC X	\$ 1636		٤ ×	9-3K		 	1	7			X				=======================================	
_	1656		2	りーかい		 					مر				ł	
	₹0L)		ı	8-MW			-	5			××				21-	
	1703			8-MW		-	_		_		٨				_	
	1734			8-MW			Н	7			X X				-13	
	1734			5-00	10			\vdash			ኦ					
	1800		_	m4-4				7	-		XX				11.7	
	1800			mes-4			_			_	ح					
	1634			mm-				-			× ×				-15	
1	1408)		T	5				-			K				(-	
Tun around time	N C Normal		☐ 26% Rush		Peret.	C 100% Rush	£32									
Retinquished by (Signature)	(Signature)	7	100 m	ES S	Received by: (Signature)	5 Py: (5	ignatur	•		<u> </u>	Time.	NOTES	1.5	Parade	ES: No Plains of Plains	Z.
Relinquished by (Signature)	y (Signature)		Pate	Tme:	Received by: (Signature)	3 by: (5	gratur	9		Sign Control	The) 	A # ())
Relinquished by (Signature)	y (Signature)		Date:	Time:	Received by: (Signature)	5 by: (6	gmetun	9		O Sabe:	Time:	,				
Reimquished by (Signeture)	y (Signeture)		Date:	Time:	Repaired by: (Signature)	Jy: (Signa	ignatur	ture	ا, ا	713/68	Time:	3	190121	witchelise seals	3	
Matrix Container	WW - Wastowater VOA - 40 ml visi	à.	W - Wats A/G - Am	W - Water 8 - Soil SD - Soild A/G - Amber / O' Glass 1 Liter	SD Solid	i	L. Liquid A - Air Beg 250 ml - Glass wide mouth	A PA	Page 1		C - Chancoal tube P/O - Plastic or other,	St studge	NO-0	5 l		
Road 989	Suite 100 OA3 Pax (713) 690-87	£	32 B &	Dailtas Office 8901 Carpender Processy, Soite 100 Dailtas, Testas 75247 (214) 630-1010 Far (214) 630-7070	cowy, Soite 10 rx (214) 630-7	. 8		Fort We 2601 Or 7501 Or 317, 26	the Office of the Control of the Con	76118 Per (817)	For Worth Office 260] Gravel Drive For Worth, Teass 76118 (317) 258-8500 Pex (817) 288-8602	Austin Office 5307 Industria Austin, Texas (512) 442-112	Office tustrial Oaks B Texas 78735 2-1122 Fax (Austin Office 5307 Industrial Oaks Bivd. # 160 Austin, Texas 78735 (312) 442-1122 Fex (512) 442-1181	Midhand Office 24 Smith Rd., # 261 Midhand, Texas 79705 (432), 884-9608 Pax (432), 684-9608	OS 12 (432) 684-9608

	4 4 4 4	ENWIR	QV.	"DAVIRONAIENTAL, GEOTECHAIGAL AND GÖNSTRÜGTION-MATERIALS SERMIGES	SECTEC	INICAL	NN.	√O5;	STR		N-NO	4ATE	RIALSS	CRMI	SEE		-;	Š	CHAIN OF CUSTODY RECORD	HECOR
ř	i (Í		Laboratory:	itory:	ம	ELOT	L			-	ANALYSIS REQUESTED	, ED /	//	/		//	Lab use only Due Date:	
8	Consulting Engineers & Scientists		3 40	Clentiets	Address:	.gg								_				_	Temp. of coolers when received (C*):	
fice	Mice Location Phidland	dland	_		Contact:	 						1			_	_	_		1 2 3	5
					Prone:								۱u	Ţ	7	_	_	<u></u>	7 of Bd	7 10
oject	oject Manager Calhacine Landon Poiso#:	77	رَّدُ	Londor	Posc	1	8	2001-11005	8	[,		1 1	र्डी	818 151	<u> </u>	_	_	_	_	-
1	Impler's Name				Sample	Sampler's Signature	g		\			Т	08	\T.		_	_	_	_	
J	Chris Auds	SPI			V			V	N	- 1			5	(_	_	_	<i>-</i>		
물,		E	100	Project Name	,			√	\$	No/Type of Containers	F.	e	k3.	#	_	_	_	_		
4	4407700 8	-	اڌ	Livingston Ridge - HP sims	(4.9)	刊	^	Ę				7	15.	¥ q	_	_	_	_	10000	,-
ŧ	Date Time	OoEa	Q- 4£		Identifying Marks of Semple(s)		had? diqaG	Depth	ğ	홍크	95 E	§		_	_		_	_	Lab Sample ID (Lab Use Only)	the Only)
7	21.80 80 18 X	8581	X	Decon	70				~			<u> </u>	×						<u>ا (</u>	
1	858	8	#							I	\dagger	1							2	305
	1850	0		3	1-3E+				7				8	_						
1	1850	20		21	1-8W1					_		\vdash	8	_			E		_	
十	_	\vdash	_	_						Г		\vdash		_	_					
1		-	ļ	<u> </u>						Γ	T	\vdash					E			
\vdash	_	-	<u> </u>				Γ	Γ				\vdash		_						
 	-	-	<u> </u>					Γ						_						
H																				
			_		1					\neg		\dashv	\exists	_	\exists	\exists	-			
	un around time		Γ	Date:	9	13	3 2	N N	1		F	į	Lime.	\vdash	MOTES					
1//	The state of the s	1		3/36/8	3		5	3	ì		•	į				9	ð	Solva	Out Dougholds W. Plains	
agua	elinquished by (Signature)	(9)		Date:	Time:	Received by: (Signature)	40	Signer	ê g		<u> </u>	Oate:	Time:		9	į		2	•	
elinge	elinquished by (Signature)	(Quin		Date:	Time:	Received by: (Signature)	d D	Signet	25		 -	Date:	ja ja							
aprile B	elinquished by (Signature)	(Jure		Date:	Time:	Received by: (Signature)	30	Signet LO:	E	ture)		1/5/	Pate 17 Time:	Ţ <u>.</u>	3	121/2	113 6	wildhels & suchs	نې	
atrtx ontainer	WW - Wastewater VOA - 40 ml viel	tewater ni viel		W - Water A/G - Amber	W - Water S - Soll SD - Solid A/G - Amber / Or Glass 1 Liber	SD - 30#		L - Liquid A - As Bag 250 ml - Glass wide mouth	Glass	At Ba	a S	Š	C - Chercoal tube P/O - Pisstic or other	.1	St studge		9.0			
outton Office 1555 Clay Ro	outton Office 1555 Clay Rosé, Suite 100]	200 S	Dullas Office 8901 Carpener Freeway, Suite 100	eey, Sudte 1:	8		50	Worth Care	要美	:	Fort Worth Office 2601 Gravel Drive		Austin Office 5307 Industri	Untrie	Austin Office 5307 Industrial Caks Bivd. # 160	160	Midhand Office 24 Smith Rd., # 261	
9	Dexas 77043 10090 Fax (713) 64	DO.8787		214) 6	Texas (324)	-0140 630	0,670		£ 5	268-856	5 2 5 2 5	617	NA.8602		AB48.	2-1122	55 Fig. (512) 44	1811-73	(432) 684-9600 Fax	4137 694 GKNB

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client:	Terracon / Plains	
Date/ Time:	3 3 08 17:00	
Lab ID#:	<u> </u>	
Initials:	٩L .	
	Sample Receipt Checklist	

	Sample Receipt	Checklist		Client Initial
#1	Temperature of container/ cooler?	Yes)	No	3.5 °C
#2	Shipping container in good condition?	(es)	Nσ	
#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?	(es	No	
#8	Chain of Custody agrees with sample label(s)?	(e)s	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?	(es)	No	See Below
#13	Samples properly preserved?	(es)	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)?	(es	No	See Below
#18	All samples received within sufficient hold time?	Yes	No	See Below
#15	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 Acti	on Taken:					
Check all that	Apply:	☐ ci		I/ fax and would like to proceed d begun shortly after sam		

Analytical Report 304739

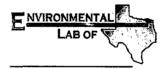
for

PLAINS ALL AMERICAN EH&S

Project Manager: Camille Reynolds

Livingston Ridge-HP Sims 2001-11005

03-JUN-08



12600 West I-20 East Odessa, Texas 79765

Texas certification numbers: Houston, TX T104704215

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

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

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

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





03-JUN-08

Project Manager: Camille Reynolds
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: 304739

Livingston Ridge-HP Sims

Project Address:

Camille Reynolds:

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 304739. 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. 304739 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 304739



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge-HP Sims

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-14	W	May-28-08 15:55		304739-001
MW-15	W	May-28-08 16:27		304739-002
MW-12	W	May-28-08 17:02		304739-003
MW-13	W	May-28-08 17:36		304739-004
MW-11	W	May-28-08 18:15		304739-005
MW-10	W	May-28-08 19:19		304739-006
MW-6	W	May-28-08 19:49		304739-007
MW-9	W	May-28-08 20:34		304739-008



Certificate of Analysis Summary 304739 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge-HP Sims

Contact: Camille Reynolds Project Id: 2001-11005

Project Location:

Date Received in Lab: Thu May-29-08 09:55 am Report Date: 03-JUN-08

Project Manager: Brent Barron, II

		300			(
	Lab Id:	304739-001	304739-002	304739-003	304739-004	304739-005	304739-006
Lobration D. Contract	Field Id:	MW-14	MW-15	MW-12	MW-13	MW-11	MW-10
Anniyas Nequesieu	Depth:						
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	Sampled:	May-28-08 15:55	May-28-08 16:27	May-28-08 17:02	May-28-08 17:36	May-28-08 18:15	May-28-08 19:19
BTEX by EPA 8021B	Extracted:	Jun-02-08 10:00	Jun-02-08 10:00	Jun-02-08 10:00	Jun-02-08 10:00	Jun-02-08 17:48	Jun-02-08 17:48
	Analyzed:	Jun-02-08 20:30	Jun-02-08 20:46	Jun-02-08 21:03	Jun-02-08 21:19	Jun-02-08 23:32	Jun-02-08 23:49
	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	ND 0.0010	0.0020 0.0010	0.0018 0.0010	ND 0.0010	ND 0.0010
Total Xylenes		Ð	QV.	0.002	0.0018	ND	ND
Total BTEX		QN	ND	0.002	0.0018	ND	ND

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and maters no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

Since 1990

Odessa Laboratory Director



Certificate of Analysis Summary 304739 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge-HP Sims

Date Received in Lab: Thu May-29-08 09:55 am

Report Date: 03-JUN-08

Contact: Camille Reynolds Project Id: 2001-11005 Project Location:

Project Location:				Project Manager: Brent Barron, II	
	Lab Id:	304739-007	304739-008		
A share the state of the state	Field Id:	9-MM	MW-9		
Anaiysis Kequesiea	Depth:				
	Matrix:	WATER	WATER		
	Sampled:	May-28-08 19:49	May-28-08 20:34		
RTEX by EPA 8021B	Extracted:	Jun-02-08 17:48	Jun-02-08 17:48		
	Analyzed:	Jun-03-08 00:06	Jun-03-08 00:22		
	Units/RL:	mg/L RL	mg/L RL		
Benzene		ND 0.0010	ND 0.0010		
Toluene		ND 0.0020	ND 0.0020		
Ethylbenzene		ND 0.0010	ND 0.0010		
m,p-Xylenes		ND 0.0020	ND 0.0020		
o-Xylene		ND 0.0010	ND 0.0010		
Total Xylenes		QN	ND		
Total BTEX		Ð	QN		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best, ladgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi Since 1990

Odessa Laboratory Director



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the MQL(PQL) and above the SQL(MDL).
- 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.
- * Outside XENCO'S scope of NELAC Accreditation

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

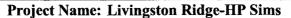
Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

	Phone	Fax
11381 Meadowglen Lane Suite L Houston, Tx 77082-2647	(281) 589-0692	(281) 589-0695
9701 Harry Hines Blvd, Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, Suite 104, San Antonio, TX 78238	(210) 509-3334	(210) 509-3335
2505 N. Falkenburg Rd., Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
6017 Financial Dr., Norcross, GA 30071	(770) 449-8800	(770) 449-5477







Work Order #: 304739

Lab Batch #: 724179

Sample: 304736-001 S / MS

Project ID: 2001-11005

Batch: 1

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY :	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 724179

Sample: 304736-001 SD / MSD

Batch: 1

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY :	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 724179

Sample: 304739-001 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 724179

Sample: 304739-002 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 724179

Sample: 304739-003 / SMP

Batch: 1

Matrix: Water

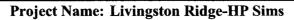
Units: mg/L	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution







Work Order #: 304739

Lab Batch #: 724179

Sample: 304739-004 / SMP

Project ID: 2001-11005

Matrix: Water Batch: 1

Units: mg/L	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0317	0.0300	106	80-120	

Lab Batch #: 724179

Sample: 509908-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 724179

Sample: 509908-1-BLK / BLK

Batch:

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0313	0.0300	104	80-120		
4-Bromofluorobenzene	0.0246	0.0300	82	80-120		

Lab Batch #: 724179

Sample: 509908-1-BSD / BSD

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0308	0.0300	103	80-120		
4-Bromofluorobenzene	0.0314	0.0300	105	80-120		

Lab Batch #: 724294

Sample: 304739-005 / SMP

Batch: 1

Matrix: Water

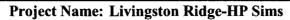
Units: mg/L	SU	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1,4-Difluorobenzene	0.0315	0.0300	105	80-120			
4-Bromofluorobenzene	0.0270	0.0300	90	80-120			

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution







Work Order #: 304739

Lab Batch #: 724294

Sample: 304739-006 / SMP

Project ID: 2001-11005

Batch: 1 Matrix: Water

SURROGATE RECOVERY STUDY Units: mg/L Control Amount True BTEX by EPA 8021B Flags Recovery Limits Found Amount [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0317 0.0300 106 80-120 4-Bromofluorobenzene 0.0294 0.0300 80-120 98

Lab Batch #: 724294

Sample: 304739-006 S / MS

Batch: 1

Matrix: Water

Units: mg/L	SU	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1,4-Difluorobenzene	0.0299	0.0300	100	80-120			
4-Bromofluorobenzene	0.0294	0.0300	98	80-120			

Lab Batch #: 724294

Sample: 304739-006 SD / MSD

Batch: 1

Matrix: Water

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

Lab Batch #: 724294

Sample: 304739-007 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0319	0.0300	106	80-120		
4-Bromofluorobenzene	0.0289	0.0300	96	80-120		

Lab Batch #: 724294

24294

Sample: 304739-008 / SMP

Batch: 1

Matrix: Water

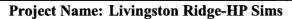
Units: mg/L	SU	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1,4-Difluorobenzene	0.0308	0.0300	103	80-120			
4-Bromofluorobenzene	0.0305	0.0300	102	80-120			

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution







Work Order #: 304739

Lab Batch #: 724294

Sample: 509986-1-BKS / BKS

Project ID: 2001-11005

Matrix: Water Batch:

Units: mg/L SURROGATE RECOVERY STUDY

Omes. mg L	50	KKOOATE KI	ECOVERI A	JIODI	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 724294

Sample: 509986-1-BLK / BLK

Matrix: Water Batch:

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

Lab Batch #: 724294

Sample: 509986-1-BSD / BSD

Batch: Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0266	0.0300	89	80-120		
4-Bromofluorobenzene	0.0278	0.0300	93	80-120		

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



100

124



Project Name: Livingston Ridge-HP Sims

Work Order #: 304739

Analyst: SHE

Date Prepared: 06/02/2008

Project ID: 2001-11005 Date Analyzed: 06/02/2008

Matrix: Water

Sample: 509908-1-BKS Lab Batch ID: 724179

Batch #: 1

Flag Control Limits %RPD 25 22 25 25 25 BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Control Limits %R 70-125 71-129 70-131 71-133 70-125 RPD d Bik. Spk 0up G.R. E 90 95 66 104 92 Duplicate Result [F] Blank Spike 0.0924 0.0950 0.1976 0.1039 0.0901 Spike Added 0.2 Ξ 0.1 0.1 0.1 0.1 Blank Spike %R [D] 103 8 8 93 97 Blank Spike Result 0.1949 0.1030 0.0892 0.0904 0.0929 <u>5</u> 0.1000 0.2000 0.1000 0.1000 0.1000 Spike Added <u>B</u> Sample Result Blank 2 Ē ND Ð Ð <u>*</u> BTEX by EPA 8021B Units: mg/L Analytes Ethylbenzene m,p-Xylenes

Analyst: SHE

o-Xylene

Toluene

Benzene

Lab Batch ID: 724294

Date Prepared: 06/02/2008

Batch #:]

Sample: 509986-1-BKS

Date Analyzed: 06/02/2008 Matrix: Water

Flag Limits %RPD Control 25 25 25 25 25 BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Control Limits %R 70-125 71-133 70-125 71-129 70-131 RPD 9 S 110 Pup. [G %R 114 118 119 107 Duplicate Result [F] 0.1095 0.1142 0.2362 0.1186 Blank Spike 0.1065 Spike Added 0.2 2 0.1 0.1 0.1 Ξ Blank Spike %R [D] 5 108 112 115 101 0.1149 Blank Spike Result [C] 0.1084 0.2242 0.1005 0.1041 0.1000 0.1000 0.1000 Spike Added 0.10000.2000 [<u>B</u>] Sample Result ¥ Ð ₽ 2 £ Ð BTEX by EPA 8021B Units: mg/L Analytes Ethylbenzene m,p-Xylenes Benzene o-Xylene Toluene

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 Relative Percent Difference RPD = 200*[(D-F)/(D+F)]



Form 3 - MS / MSD Recoveries



Project Name: Livingston Ridge-HP Sims

Work Order #: 304739

Date Analyzed: 06/02/2008 Lab Batch ID: 724179

Reporting Units: mg/L

Project ID: 2001-11005

SHE Batch #: Analyst:

QC-Sample ID: 304736-001 S

Date Prepared: 06/02/2008

Matrix: Water

Flag Limits %RPD Control 25 25 25 25 25 Control Limits 70-125 71-129 70-125 71-133 70-131 %R MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY RPD <u>Ö</u> Ξ 1 11 Ξ Spiked Dap. 102 109 114 117 Spiked Sample Duplicate Result [F] 0.1024 0.1062 0.1103 0.2279 0.1167 Spike Added 0.1000 0.1000 0.1000 0.2000 0.1000 Ξ Spiked Sample . R E 105 102 22 95 86 Spiked Sample Result 0.0989 0.2045 0.1050 0.0952 0.0921 <u></u> Spike Added 0.1000 0.2000 0.1000 0.1000 0.1000 8 Parent Sample Result 0.0012 ₹ 2 2 S B BTEX by EPA 8021B Analytes Ethylbenzene m,p-Xylenes o-Xylene Toluene Benzene

Date Analyzed: 06/03/2008 Lab Batch ID: 724294

QC-Sample ID: 304739-006 S Date Prepared: 06/02/2008

Matrix: Water SHE Batch #: Analyst:

Flag Limits %RPD Control 25 25 25 22 70-125 70-125 71-129 Control Limits %R 70-131 MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY RPD 4 0 Spiked Dup. [G] 98 87 8 93 Duplicate Spiked Sample Result [F] 0.0856 0.0874 0.0904 0.1863Spike Added 0.1000 0.1000 0.1000 0.2000 Ξ Sample Spiked %R <u>a</u> 88 88 93 16 Spiked Sample Result 0.0892 0.0907 0.18660.0891 Spike Added 0.1000 0.1000 0.2000 0.1000 <u>B</u> Parent Sample Result ₹ Ð 夏夏 8 BTEX by EPA 8021B Analytes Reporting Units: mg/L Ethylbenzene m,p-Xylenes Benzene Toluene

25

71-133

4

0.0940

0.1000

95

0.0951

0.1000

呈

o-Xylene

Matrix Spike Percent Recovery [D] = 100*(C-A)/BRelative Percent Difference RPD = 200*(D-G)/(D+G)

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

Tamp, of coolers
when received (C*): 7 S CHAIN OF CUSTODY RECORD BTES only on all samples Lab Sampte 10 (Lab Use Only) 304739 - 01 Lab use only Due Date: Camille W/ Plains Strate & serves ANALYSIS REQUESTED / So Jine: Time: So Jine: So Jine: So Jine: So Sharooal tube So Pro- Plastic or other BIEX (805/18) Time: Time: Time: L. Liquid A. Ali Bag G. Chaucotal tasa 250 ml. Gasawath mouth Pro. Plastic or of 250 ml. Gasas Dress 70 (817) 254-8502 Fast (817) 258-8502 Date: Date: Cate VOA A/8 256 PrO Aulds
Project Name
Livingston Ridge-HPSing 10/VOA
TESTER No. 128 20 PP Project Manager Castbacide Loadon Poiso # 2001-11005 Bacained by: (Signalgra) GEOTECHNICAL AND CONSTR Date: Time: Received by: (Signature)
Date: Time: Received by: (Signature) Received by: (Signatura) Hourstying Marks of Samphaja) (5) 25 C Laboratory: E LOT W - Water 8 - Soil SD - Soild AG - Amber / Or Gless 1 Liter BUN-TO MW-15 Address Contact GL-WM MW-13 MW Phone: mc -9 mw-14 Time: Time: Consulting Engineers & Scientists
Office Location Nid (4 h) Detra Oathe Turn around time Dillomail
Relinquisped by (Signature) 5/28/2 1555/V WW - Westewater VOA - 40 ml dat 6 6 13% 1627 1702 1815 2034 telinquished by (Signature) Relinquished by (Signature) 749 Relinquished by (Signature) Chris ANOTTOOR Oats

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

Austin Office 5307 Indescriat Oaks Bivd. # 160 Aurila, Teats 18735 (512) 442-1122 Par (512) 442-1181

Dailos Office 8901 Carponier Freeway, Suite 100 Dailos, Texas 75247 (214) 630-1000 Fax (214) 630-7070

Houston Office 11555 Cay Road, Suite 100 Rouston, Teast 77043 (713) 650-8589 Fax (713) 650-8787

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

2011720	Client:	Terracon Plains
Lab ID#: 304 739	Date/ Time:	5-79-08 9:55
	Lab ID#:	<u>304739</u>
Initials: AL	Initials:	aL

Sample Receipt Checklist

				Client (niti
#1	Temperature of container/ cooler?	(85)	No	2.5 °c
#2	Shipping container in good condition?	(es)	No	
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present
#4	Custody Seals intact on sample bottles/ container?	Ves €	No	Not Present
#5	Chain of Custody present?	Yes	No	
#6	Sample instructions complete of Chaln of Custody?	(es	No	
#7	Chain of Custody signed when relinquished/ received?	Yes	No	
#8	Chain of Custody agrees with sample label(s)?	1	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?	(es)	No	
#12	Samples in proper container/ bottle?	Ves)	No	See Below
#13		Yés	No	See Below
#14	Sample bottles intact?	(es)	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)?	X 69	No	See Below
#18		Ves	No	Sec: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	1.			
Check all that Apply:		See attached e-mail/ fax Client understands and would like to		

Analytical Report 310781

for

PLAINS ALL AMERICAN EH&S

Project Manager: Camille Reynolds

Livingston Ridge 2001-11005

26-AUG-08



12600 West I-20 East Odessa, Texas 79765

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

Florida certification numbers:

Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675

Norcross(Atlanta), GA E87429

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

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

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America Midland - Corpus Christi - Atlanta Page 1 of 14



26-AUG-08

Project Manager: Camille Reynolds
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: 310781

Livingston Ridge Project Address:

Camille Reynolds:

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 310781. 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. 310781 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.

Brent Barron, II
Odessa Laboratory Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and OUALITY

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



Sample Cross Reference 310781

PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-14	W	Aug-21-08 09:28	•	310781-001
MW-11	W	Aug-21-08 10:13		310781-002
MW-15	W	Aug-21-08 09:45		310781-003
MW-13	W	Aug-21-08 10:49		310781-004
MW-12	W	Aug-21-08 11:23		310781-005
MW-10	W	Aug-21-08 11:48		310781-006
MW-9	W	Aug-21-08 12:18		310781-007
MW-6	W	Aug-21-08 13:00		310781-008
MW-4	W	Aug-21-08 13:50		310781-009
MW-5	W	Aug-21-08 14:55		310781-010



Certificate of Analysis Summary 310781 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

ND 0.0010 ND 0.0010 ND 0.0020 ND 0.0020 ND 0.0010 R Aug-21-08 11:48 Aug-22-08 15:00 Aug-23-08 04:24 310781-006 MW-10 S g mg/L Date Received in Lab: Fri Aug-22-08 09:45 am R 0.0518 0.0010 0.0398 0.0010 ND 0.0020 0.0036 0.0020 ND 0.0010 Aug-23-08 05:35 Aug-22-08 15:00 Aug-21-08 11:23 310781-005 Project Manager: Brent Barron, II MW-12 Report Date: 26-AUG-08 0.0036 0.0952 mg/L ND 0.0020 ND 0.0010 Ъ ND 0.0010 ND 0.0020 ND 0.0010 Aug-23-08 04:00 Aug-21-08 10:49 Aug-22-08 15:00 310781-004 WATER MW-13 2 2 Z 0.0041 0.0010 ND 0.0010 ND 0.0020 ND 0.0010 ND 0.0020 Aug-21-08 09:45 Aug-22-08 15:00 Aug-23-08 03:37 310781-003 MW-15 g 0.0041 Z ND 0.0010 ND 0.0010 ND 0.0020 ND 0.0010 ND 0.0020 Aug-23-08 03:13 Aug-21-08 10:13 Aug-22-08 15:00 310781-002 MW-11 S R mg/L ND 0.0010 ND ND ND 0.0010 ND 0.0010 ND 0.0020 ND 0.0020 Aug-22-08 15:00 Aug-23-08 01:38 Aug-21-08 09:28 310781-001 MW-14 mg/L Depth: Matrix: Lab Id: Field Id: Sampled: Extracted: Analyzed: Units/RL: BTEX by EPA 8021B Contact: Camille Reynolds Analysis Requested Project Id: 2001-11005 Project Location: Total Xylenes Ethy lbenzene m,p-Xylenes Total BTEX

o-Xy lene

Toluene Benzene

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Chri Since 1990

Odessa Laboratory Director

This analytical report, and the entire data package it represents, has been made for your exchasive and confidential use. The interpretations and results experses eitheroglout this analytical report researes the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the red use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.



Certificate of Analysis Summary 310781 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Contact: Camille Reynolds Project Id: 2001-11005

Project Location:

Date Received in Lab: Fri Aug-22-08 09:45 am Report Date: 26-AUG-08

					Project Manager: Brent Barron, II
	Lab Id:	310781-007	310781-008	310781-009	310781-010
And India Donner of	Field Id:	6-WW	9-WW	M-W-4	MW-5
Anaiysis wey nesieu	Depth:				
	Matrix:	WATER	WATER	WATER	WATER
	Sampled:	Aug-21-08 12:18	Aug-21-08 13:00	Aug-21-08 13:50	Aug-21-08 14:55
BTEX by EPA 8021B	Extracted:	Aug-22-08 15:00	Aug-22-08 15:00	Aug-22-08 15:00	Aug-23-08 12:09
	Analyzed:	Aug-23-08 04:48	Aug-23-08 05:12	Aug-23-08 05:59	Aug-24-08 05:27
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Benzene		ND 0.0010	0.0017 0.0010	0.0232 0.0010	0.0107 0.0010
Toluene		ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020
Ethy Ibenzene		ND 0.0010	ND 0.0010	0.0303 0.0010	0.0032 0.0010
m,p-Xylenes		ND 0.0020	ND 0.0020	0.0220 0.0020	ND 0.0020
o-Xy lene		ND 0.0010	ND 0.0010	0.0147 0.0010	0.0027 0.0010
Total Xylenes		ND	ND	0.0367	0.0027
Total BTEX		ND	0.0017	0.0902	0.0166

This smallytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and restants expressed throughout this analytical proof research the budgemen of XENCO Laboratories. XENCO Laboratories assumes no responsibility and make no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Chri Since 1990

Odessa Laboratory Director

Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the MQL(PQL) and above the SQL(MDL).
- 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.
- * Outside XENCO'S scope of NELAC Accreditation

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

	Phone	Fax
11381 Meadowglen Lane Suite L Houston, Tx 77082-2647	(281) 589-0692	(281) 589-0695
9701 Harry Hines Blvd, Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, Suite 104, San Antonio, TX 78238	(210) 509=3334	(210) 509-3335
2505 N. Falkenburg Rd., Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
6017 Financial Dr., Norcross, GA 30071	(770) 449-8800	(770) 449-5477



Project Name: Livingston Ridge

Work Order #: 310781

Project ID:2001-11005

Lab Batch #: 732054

Sample: 310781-001 / SMP

Batch:

Matrix: Water

Units: mg/L		SURROGATE	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0359	0.0300	120	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

Lab Batch #: 732054

Sample: 310781-001 S / MS

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1,4-Diffuorobenzene	0.0288	0.0300	96	80-120			
4-Bromofhiorobenzene	0.0342	0.0300	114	80-120			

Lab Batch #: 732054

Sample: 310781-001 SD / MSD

Batch:

Matrix: Water

Units: mg/L		SURROGATE	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]	/ / /	
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0345	0.0300	115	80-120	

Lab Batch #: 732054

Sample: 310781-002 / SMP

Batch:

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1,4-Difluorobenzene	0.0350	0.0300	117	80-120			
4-Bromofluorobenzene	0.0281	0.0300	94	80-120			

Lab Batch #: 732054

Sample: 310781-003 / SMP

Batch:

Matrix: Water

Units: mg/L		SURROGATE	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0392	0.0300	131	80-120	**
4-Bromofluorobenzene	0.0355	0.0300	118	80-120	

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution



Project Name: Livingston Ridge

Work Order #: 310781

Project ID:2001-11005

Lab Batch #: 732054

Sample: 310781-004/SMP

Matrix: Water Batch:

Units: mg/L	!	SURROGATE	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found	True Amount	Recovery %R	Control Limits %R	Flags
Analytes	[A]	[B]	%R [D]	70R	
1,4-Diffuorobenzene	0.0341	0.0300	114	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

Lab Batch #: 732054

Sample: 310781-005 / SMP

Batch:

Matrix: Water

Units: mg/L		SURROGATE	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	[c ₁]	[10]	[D]	/01	
1,4-Difluorobenzene	0.0361	0.0300	120	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 732054

Sample: 310781-006 / SMP

Batch:

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]	ļ	<u> </u>		
1,4-Difluorobenzene	0.0352	0.0300	117	80-120			
4-Bromofluorobenzene	0.0283	0.0300	94	80-120			

Lab Batch #: 732054

Sample: 310781-007 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1,4-Difluorobenzene	0.0368	0.0300	123	80-120	**		
4-Bromofluorobenzene	0.0314	0.0300	105	80-120			

Lab Batch #: 732054

Sample: 310781-008 / SMP

Batch: 1

Matrix: Water

Units: mg/L	,	SURROGATE	RECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Diffuorobenzene	0.0398	0.0300	133	80-120	**
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution



Project Name: Livingston Ridge

Work Order #: 310781

Sample: 310781-009 / SMP

Project ID: 2001-11005

Lab Batch #: 732054

Batch:

Matrix: Water

Units: mg/L		SURROGATE	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	[A]	101	[D]	761	
1,4-Difluorobenzene	0.0350	0.0300	117	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 732054

Sample: 514452-1-BKS / BKS

Batch: 1

Matrix: Water

Units: mg/L		SURROGATE	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		' '	[D]		
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 732054

Sample: 514452-1-BLK / BLK

Batch:

Matrix: Water

Units: mg/L		SURROGATE	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			(D)		ļ
1,4-Diffuorobenzene	0.0349	0.0300	116	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	Ì

Lab Batch #: 732054

Sample: 514452-1-BSD / BSD

Batch: 1

Matrix: Water

Units: mg/L		SURROGATE	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofhuorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 732194

Sample: 310714-001 S / MS

Batch:

Matrix: Water

Units: mg/L		SURROGATE	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Diffuorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution



Project Name: Livingston Ridge

Work Order #: 310781

Project ID: 2001-11005

Lab Batch #: 732194

Sample: 310714-001 SD / MSD

Matrix: Water Batch:

Units: mg/L		SURROGATE	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	(**)	(2)	(D)	/013	
1,4-Diffuorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 732194

Sample: 310781-010/SMP

Batch:

Matrix: Water

Units: mg/L		SURROGATE	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0364	0.0300	121	80-120	**
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 732194

Sample: 514543-1-BKS / BKS

Batch:

Matrix: Water

Units: mg/L		SURROGATE	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount	Recovery %R	Control Limits %R	Flags
Analytes	[A]	[B]	[D]	70K	
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

Lab Batch #: 732194

Sample: 514543-1-BLK/BLK

Batch: 1

Matrix: Water

Units: mg/L		SURROGATE	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes 1.4-Diffuorobenzene	0.0250	0.0200	[D]	90.120	
4-Bromoffuorobenzene	0.0350	0.0300	98	80-120	

Lab Batch #: 732194

Sample: 514543-1-BSD / BSD

Batch:

Matrix: Water

Units: mg/L		SURROGATE	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution



BS / BSD Recoveries

Project Name: Livingston Ridge

Work Order#: 310781

Analyst: BRB

Date Prepared: 08/22/2008

Project ID: 2001-11005 Date Analyzed: 08/22/2008

Matrix: Water

Lab Batch ID: 732054

Sample: 514452-1-BKS

Batch#: 1

Units: mg/L		BI	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	IK SPIKI	E / BLAN	IK SPIKE DI	UPLICAT	E RECO	VERY ST	UDX	
BTEX by EPA 8021B	Blank Sample Result	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Dublicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	¥	[B]	<u>5</u>	<u>a</u>	E	Result [F]	<u>ত</u>				
Benzene	Ð	0.1000	0.0733	73	0.1	0.0916	92	22	70-125	25	
Toluene	QN	0.1000	0.0768	77	0.1	0.0954	95	22	70-125	25	
Ethylbenzene	QN	0.1000	0.0874	28	0.1	0.1098	110	23	71-129	25	
mp-Xylenes	ON	0.2000	0.1804	8	0.2	0.2239	112	22	70-131	25	
o-Xylene	QN	0.1000	0.0845	88	0.1	0.1051	105	7.7	71-133	25	

Analyst: BRB

Date Prepared: 08/23/2008

Date Analyzed: 08/23/2008 Matrix: Water

Lab Batch ID: 732194

Sample: 514543-1-BKS

Batch#: 1

BLANK /RI ANK SPIKE / BLANK SPIKE DIPLICATE RECOVERY STIIDY

Units: mg/L		DI	AND / DLAIN	N SFINE	, DEALY	DLAINN / BLAINN STINE / BLAINN STINE DUFLICATE NECOVERT STUDI	FLICAL	E RECO	VERI SI	UDI	
BTEX by EPA 8021B	Blank Sample	Spike Added	Blank Spike	Blank Spike	Spike Added	Blank Spike	Blk. Spk Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	[B]	Result [C]	%R [D]	(E)	Duplicate Result [F]	%R [G]	%	% K	%RPD	
Benzene	QN	0.1000	0.1045	105	0.1	0.1061	106	2	70-125	25	
Toluene	ND	0.1000	0.1040	104	0.1	0.1062	106	2	70-125	25	
Ethylbenzene	ND	0.1000	0.1120	112	0.1	0.1145	115	2	71-129	25	
mp-Xylenes	ND	0.2000	0.2284	114	0.7	0.2327	116	2	70-131	25	
o-Xylene	ND	0.1000	0.1082	108	0.1	0.1103	110	7	71-133	25	

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



Form 3 - MS / MSD Recoveries

Project Name: Livingston Ridge

Work Order#: 310781

Lab Batch ID: 732054

Date Analyzed: 08/23/2008

Project ID: 2001-11005

Matrix: Water Batch #:

BRB

Analyst: 310781-001 S 08/22/2008 Date Prepared: QC- Sample ID:

Flag %RPD Control Limits 25 25 25 25 25 70-125 70-125 71-133 71-129 Control Limits %R 70-131 MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY RPD 0 0 N Spiked 7 % E 102 106 87 84 97 Duplicate 0.0844 0.0874 Result [F] 0.1020 6960'0 Spiked Sample 0.2113 Spike Added 0.1000 0.2000 0.1000 0.10000.1000 Ξ Spiked Sample %R 104 95 101 ≘ 84 87 0.0837 0.0865 0.1006 0.2080 0.0948 Spiked Sample Result $\overline{\Omega}$ 0.2000 Spike Added [B] 0.1000 0.1000 0.1000 0.1000 Parent Sample Result Ω ΩN ND N_D ₹ 8 BTEX by EPA 8021B Analytes mg/L Reporting Units: Ethylbenzene mp-Xylenes o-Xylene Benzene Toluene

Date Analyzed: 08/24/2008 Lab Batch ID: 732194

310714-001 S 08/23/2008 Date Prepared: QC- Sample ID:

Matrix: Water BRB Batch #: Analyst:

Flag Limits %RPD Control Control Limits %R MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY RPD % Dup. [G. 8, 1. Spiked Spiked Sample Result [F] Duplicate Spike Added Ξ Spiked
Sample
%R
[D] Spiked Sample Result $\overline{\mathbf{c}}$ Spike Added [B] Parent Sample Result <u>Y</u> BTEX by EPA 8021B Analytes Reporting Units: mg/L Ren zen

Benzene	ND	0.1000	0.1060	106	0.1000	0.0994	66	7	70-125	25	i
Toluene	ND	0.1000	0.1066	107	0.1000	0.1004	100	7	70-125	25	
Ethylbenzene	ND	0.1000	0.1151	115	0.1000	0.1077	108	9	71-129	25	
mp-Xylenes	ND	0.2000	0.2334	117	0.2000	0.2186	109	7	70-131	25	
o-Xylene	ND	0.1000	0.1107	111	0.1000	0.1033	103	7	71-133	25	

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

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

	ENV	IKON!	ENVIRONMENTMI, GEOTECHNICAL AND CONSTRUCTION MATERIALS STRVPICES	GRÖTTECH	INICAL	AND C	ONST	RUCT	N'NO	ATER	ALS SIEK	WIČES,	3	CHAIN OF CUSTODY RECORD	윤
L				a l	ahoratoor	×	X			Žά	ANALYSIS REQUESTED	////		Lab use onty Due Date:	
Consulting Engineers & Scientists]		Address:						1 1				Temp. of coolerabic? FVD IV	VIO.
Office Location Midland	Mid	anc		Contact:	븅					, ,	7			1 8 3 4	ر ا
Phone: Phone: A three in a fanded common.	(40)	1	000/000	Phone:		1	100	l			DIE			obed /	
Sempler's Name				Semple	Sempler's Stanture	e e	 			,	80			_	
Ţ	Chris Aulds	Mes	_	A		1	1	1			TX				
Proj. Na.	40	Project Name	ect Name	0	0.000	X	3 -	NoType of Containers	of Container	T .	ŢĘ				
Matrix Date	_	O-et	d tdentifying	Identifying Martis of Semple(s)	4	Start Ospth brid	∯ updeo		2 2 2 3 1					(And Sample ID (Lab Use Omy)	
86/20/16/8 W	86,80	×		Jol - W.R			6	<u></u>		×				3107B1-0	Π
_	() ()		ج	11-00			-			_				20-	
	5460		٤	31-WW										.03	
	1049		ε	81-WM		-								707	
	143	F	٤	41-mm										Z02	
	1148		W	on-mw										7 0'	
	1318		. W	-mw	61									10-	
	200		٤.	m - Co	- ,					H				80.	
	1356		ν.	איי היוש	-									٠٥٠	
7 7	1455	_		7			_	Ļ		<u>Н</u>				/ D	
Turn eround time	1 1	冒	O 28% Rush	C) 60% Rush	1	C 100% Rush	됳								
Refinquisted by (Signature)	(Signeture)	<u>, 1</u>	9 defer	True:	Received by: (Signature)	(S) (S)	nathire)			Date:		NOTES:	0	TES:	
Belffquished by (Signature)	(Signature)		Date:	Time:	Received by: (Signature)	by: (Sig	resture)		-	Date:	Time:	- K	<u>, v</u>		
Reanquished by (Signature)	(Signature)		Date:	Time:	Received by: (Signeture)	by: (Sig	neture)		 -	.see	Time:				
Reinquished by (Signature)	(Signature)		Date:	Тяпе:	Received by: (Signature)	\$ 50 E	SE SE	2	695	3	Parts: Time:	c/14/4/ w	15 & Stuly	16	
Matrix WA Container VO	WW - Wasteweter VOA - 40 ml viet	B	W - Weter A/G - Ambe	W - Wester 8 - Soil SD - Soild A/G - Amber / Or Glass 1 Liter	SD - Solid	İ	L. Lindo A. Air Bag 250 m² - Glass wide mouth	A - Air B	24	0.07 PO - P	C - Charcoal tube P/O - Plestic or other	St. etudge O	. O		
Houston Office 11555 Clay Road, Suite 100 Houston, Trass 77043 (713) 690-8989 Par (713) 690-8787	ire 100 3 1 (713) 690-87	اء	Dalles 8901 (Dalles (214) (Dallas Office 8901 Carpanter Freeway, Suise 100 Dallas, Texas 72.47 (214) 630-1010 Fux (214) 630-7070	nay, Suite 100 s (214) 630-70	_ £	£ ¥ £ ₹	1 Worth 1 Grave 1 Worth, 7	Office Drive 100 Park	Fort Worth Office 2601 Gravel Drive Fort Worth, Texas 76118 (\$17) 264-8600 Pax (\$17) 164-8602	,8602	Austin Office \$207 Industrial Oaks Bird. # 160 Austin. Teas 78735 (\$12) 442-1122 Fax (\$12) 442-1181	Blvd. # 160 (512) 442-1181	Midhad Office 24 Smith Rd. # 261 Midhad, Texa 19703 (432) 644-9600 Fu. (432) 684-9608	808

Environmental Lab of Texas

Variance/ Corrective Action Re	eport- Sample	Log-In		
Client Torraron Plains				
Date/Time: 8.22.08 9'.45				
Lab ID#: 31c781				
Initials: <u>au</u>				
Sample Receipt	t Checklist			
			12 of Frozen Client in	itials
#1 Temperature of container/ cooler?	(Yes)	No	-1.0 °C	i
#2 Shipping container in good condition?	(Tes	No		
#3 Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4 Custody Seals intact on sample bottles/ container?	(es)	No	Not Present	
#5 Chain of Custody present?	(es)	No		
#6 Sample instructions complete of Chain of Custody?	(es)	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?	(es)	No	Not Applicable	
#10 Sample matrix/ properties agree with Chain of Custody?	X es	No		
#11 Containers supplied by ELOT?	/ Yes	No		
#12 Samples in proper container/ bottle?	Yes	No	See Below	_
#13 Samples properly preserved?	Ves	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	C Bil	
	(es)	No	See Below	
#18 All samples received within sufficient hold time?		No	See Below	
#19 Subcontract of sample(s)?	Yes		Not Applicable >	— ↓
#20 VOC samples have zero headspace?	(YES)	No	Not Applicable	
Variance Doce	umentation			
Contact: Contacted by:		_	Date/ Time:	
Regarding:				
				
Corrective Action Taken:				

Check all that Apply: See attached e-mail/ fax Client understands and wo Cooling process had begu				

Analytical Report 317354

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Livingston Ridge 2001-11005

19-NOV-08





12600 West I-20 East Odessa, Texas 79765

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

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

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

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

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





19-NOV-08

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

Reference: XENCO Report No: 317354

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 317354. 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. 317354 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and OUALITY

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



Sample Cross Reference 317354



PLAINS ALL AMERICAN EH&S, Midland, TX

Livingston Ridge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-14	W	Nov-08-08 13:24		317354-001
MW-15	W	Nov-08-08 13:47		317354-002
MW-11	W	Nov-08-08 14:12		317354-003
MW-13	W	Nov-08-08 14:37		317354-004
MW-12	W	Nov-08-08 15:01		317354-005
MW-10	W	Nov-08-08 15:27		317354-006
MW-9	W	Nov-08-08 15:55		317354-007
MW-6	W	Nov-08-08 16:24		317354-008
MW-4	W	Nov-08-08 16:47		317354-009
MW-5	W	Nov-08-08 17:08		317354-010



Certificate of Analysis Summary 317354 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge



Project Id: 2001-11005 Contact: Jason H

Project Location:

Open in: Local alloca				Dat	Date Received in Lab: Tue Nov-11-08 04:55 pm	fue Nov-11-08 04:55 p	щ	
Contact: Jason Henry					1 11 11 11 11	O NON O		
ocation:					Report Date: 19-100v-00	90- AON-61		
					Project Manager: Brent Barron, II	3rent Barron, II		r
	Lab Id:	317354-001	317354-002	317354-003	317354-004	317354-005	317354-006	
A section of Descention	Field Id:	MW-14	MW-15	MW-11	MW-13	MW-12	MW-10	
Anuiysis Kequesiea	Depth:							
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER	
	Sampled:	Nov-08-08 13:24	Nov-08-08 13:47	Nov-08-08 14:12	Nov-08-08 14:37	Nov-08-08 15:01	Nov-08-08 15:27	
RTEX by FPA 8021B	Extracted:	Nov-17-08 08:00	Nov-17-08 08:00	Nov-17-08 08:00	Nov-17-08 08:00	Nov-17-08 08:00	Nov-17-08 08:00	
	Analyzed:	Nov-17-08 17:57	Nov-17-08 18:20	Nov-17-08 18:42	Nov-17-08 19:04	Nov-17-08 19:26	Nov-17-08 19:48	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	
16		ND 0.0010	ND 0.0010	0.0012 0.0010	ND 0.0010	0.0033 0.0010	ND 0.0010	
e		0.0023 0.0020	ND 6.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	_
enzene		0.0010 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	
ylenes		ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	,
ne		0.0012 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	-
(ylenes		0.0012 0.0030	ND 0.0030	ND 0.0030	ND 0.0030	ND 0.0030	ND 0.0030	
STEX		0.0045 0.0070	ND 0.0070	0.0012 0.0070	ND 0.0070	0.0033 0.0070	ND 0.0070	

o-Xylene Total Xylenes

Total BTEX

Ethylbenzene m.p-Xylenes

Toluene Benzene

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and returns expressed throughout this analytical report present the best judgment of XENOO Laboratories. XENCO Laboratories assumes no responsibility and makes no warmapt to the end use of the data bretchy presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing. Since 1990

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

Odessa Laboratory Director



Project Id: 2001-11005 Contact: Jason Henry

Project Location:

Certificate of Analysis Summary 317354 PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Livingston Ridge

Date Received in Lab: Tue Nov-11-08 04:55 pm

Report Date: 19-NOV-08

Project Manager: Brent Barron, II

		2000			,	
	Lab Id:	317354-007	317354-008	317354-009	317354-010	
And a straight Description	Field Id:	6-WM	MW-6	MW-4	MW-5	
Analysis nequesian	Depth:	-		_		
	Matrix:	WATER	WATER	WATER	WATER	
	Sampled:	Nov-08-08 15:55	Nov-08-08 16:24	Nov-08-08 16:47	Nov-08-08 17:08	
RTEX by EPA 8021B	Extracted:	Nov-17-08 08:00	Nov-17-08 08:00	Nov-18-08 10:00	Nov-17-08 16:38	
	Analyzed:	Nov-17-08 20:10	Nov-17-08 20:32	Nov-18-08 16:30	Nov-18-08 11:44	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	
Benzene		ND 0.0010	0100'0 QN	0.0374 0.0010	0.2551 0.0050	
Toluene		ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0100	
Ethylbenzene		ND 0.0010	ND 0.0010	0.0041 0.0010	0.2323 0.0050	
m,p-Xylenes		ND 0.0020	ND 0.0020	ND 0.0020	0.1640 0.0100	
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0010	0.1145 0.0050	
Total Xylenes		ND 0.0030	ND 0.0030	ND 0.0030	0.2785 0.0150	
Total BTEX		ND 0.0070	0700.0 UN	0.0415 0.0070	0.7659 0.0350	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and resting expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing. Since 1990

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

Brent Barron Odessa Laboratory Director



Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the MQL and above the SQL.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte.

 The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

Phone	Fax
4143 Greenbriar Dr. Stafford, Tx 77477 (281) 240-4200 (281)	281) 240-4280
	214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238 (210) 509-3334 (200) 509-3334	210) 509-3335
	813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014 (305) 823-8500 (305)	305) 823-8555
	432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408 (361) 884-0371 (361) 884-9116



Project Name: Livingston Ridge

Work Orders: 317354,

Lab Batch #: 740498

Sample: 317192-007 S / MS

Project ID: 2001-11005

Matrix: Water Batch:

Units: mg/L	SU	RROGATE R	ECOVERY :	STUDY	111 111 121
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 740498

Sample: 317192-007 SD / MSD

Batch: 1

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 740498

Sample: 317354-001 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes 1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Lab Batch #: 740498

Sample: 317354-002 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY :	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0340	0.0300	113	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 740498

Sample: 317354-003 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			{D}		
1,4-Difluorobenzene	0.0345	0.0300	115	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution



Project Name: Livingston Ridge

Work Orders: 317354,

Lab Batch #: 740498

Project ID: 2001-11005

Sample: 317354-004 / SMP

Matrix: Water Batch:

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	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	0.0290	0.0300	97	80-120		

Lab Batch #: 740498

Sample: 317354-005 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	'.'		[D]			
1,4-Difluorobenzene	0.0368	0.0300	123	80-120	**	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120		

Lab Batch #: 740498

Sample: 317354-006 / SMP

Batch:

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0331	0.0300	110	80-120		
4-Bromofluorobenzene	0.0262	0.0300	87	80-120		

Lab Batch #: 740498

Sample: 317354-007 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0328	0.0300	109	80-120		
4-Bromofluorobenzene	0.0274	0.0300	91	80-120		

Lab Batch #: 740498

Sample: 317354-008 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
Analytes						
1,4-Difluorobenzene	0.0333	0.0300	111	80-120		
4-Bromofluorobenzene	0.0278	0.0300	93	80-120		

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution



Project Name: Livingston Ridge

Work Orders: 317354,

Project ID: 2001-11005

Lab Batch #: 740498

Sample: 519424-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L	SU	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1,4-Difluorobenzene	0.0288	0.0300	96	80-120			
4-Bromofluorobenzene	0.0270	0.0300	90	80-120			

Lab Batch #: 740498

Sample: 519424-1-BLK / BLK

Batch:

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0334	0.0300	. 111	80-120		
4-Bromofluorobenzene	0.0269	0.0300	90	80-120		

Lab Batch #: 740498

Sample: 519424-1-BSD / BSD

Batch:

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0286	0.0300	95	80-120		
4-Bromofluorobenzene	0.0279	0.0300	93	80-120		

Lab Batch #: 740568

Sample: 317354-010 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0328	0.0300	109	80-120		
4-Bromofluorobenzene	0.0283	0.0300	94	80-120		

Lab Batch #: 740568

Sample: 317382-001 S / MS

Batch: 1

Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	}		[D]			
1,4-Difluorobenzene	0.0298	0.0300	99	80-120		
4-Bromofluorobenzene	0.0281	0.0300	94	80-120		

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution



Project Name: Livingston Ridge

Work Orders: 317354,

Project ID: 2001-11005

Lab Batch #: 740568

Sample: 317382-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0286	0.0300	95	80-120		
4-Bromofluorobenzene	0.0290	0.0300	97	80-120		

Lab Batch #: 740568

Sample: 519471-1-BKS/BKS

Batch:

Matrix: Water

Units: mg/L	SU	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	''		[D]				
1,4-Difluorobenzene	0.0286	0.0300	95	80-120			
4-Bromofluorobenzene	0.0280	0.0300	93	80-120			

Lab Batch #: 740568

Sample: 519471-1-BLK / BLK

Batch:

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0332	0.0300	111	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 740568

Sample: 519471-1-BSD / BSD

Batch: 1

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 740722

Sample: 317354-009 / SMP

Batch: 1

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0341	0.0300	114	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

Surrogate Recovery [D] = 100 * A / B

^{***} Poor recoveries due to dilution



Project Name: Livingston Ridge

Work Orders: 317354,

Lab Batch #: 740722

Sample: 519579-1-BKS / BKS

Project ID: 2001-11005

Batch: 1 Matrix: Water

Units: mg/L	·SU	RROGATE R	ECOVERY!	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 740722

Sample: 519579-1-BLK / BLK

Batch: 1

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY:	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0341	0.0300	114	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	.,

Lab Batch #: 740722

Sample: 519579-1-BSD / BSD

Batch: 1

Matrix: Water

Units: mg/L	SU	RROGATE R	ECOVERY	STUDY	•
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0335	0.0300	112	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: Livingston Ridge

Work Order #: 317354

Lab Batch ID: 740498 Analyst: BRB

Sample: 519424-1-BKS

Date Prepared: 11/17/2008

Batch #: 1

Project ID: 2001-11005 Date Analyzed: 11/17/2008

Matrix: Water

Flag Control Limits %RPD 25 25 25 25 BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Control Limits %R 70-125 71-129 70-125 70-131 RPD % 0 Blk. Spk Dup. [G] 106 103 100 101 Duplicate Result [F] Blank Spike 0.1063 0.10020.1010 0.2052 Spike Added Ξ 0.2 0.1 0.1 0.1 Blank Spike %R [D] 101 107 300 66 Blank Spike Result [C] 0.2014 0.1070 0.0993 0.09990.2000 0.1000 0.1000 0.1000 Spike Added <u>B</u> Sample Result Blank ₹ N Ð B 2 BTEX by EPA 8021B Units: mg/L Analytes Ethylbenzene m,p-Xylenes Benzene Toluene

Analyst: ASA

o-Xylene

Lab Batch ID: 740568

Date Prepared: 11/17/2008

Batch #: 1

Sample: 519471-1-BKS

Date Analyzed: 11/17/2008 Matrix: Water

25

71-133

96

0.0963

0.1

93

0.0934

0.1000

N

Flag Limits %RPD Control 25 25 25 25 25 BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Control Limits 70-125 70-125 71-129 71-133 70-131 RPD 7 7 Blk. Spk Dup. [G] 104 46 6 86 93 Spike Duplicate Result [F] Blank 0.1038 9960.0 0.0965 0.1953 0.0930 Spike Added 0. 0.2 Ξ 0.1 0.1 0.1 Blank Spike %R [D] 102 95 95 16 6 0.0918 Blank Spike Result 0.0950 0.0952 0.1015 0.1937 $\overline{\Omega}$ 0.1000 0.1000 0.1000 Spike Added 0.1000 0.2000 <u>B</u> Blank Sample Result ¥ Ð B B B Ð BTEX by EPA 8021B Units: mg/L Analytes Ethylbenzene m,p-Xylenes Toluene o-Xylene Benzene

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 Relative Percent Difference RPD = 200*(C-F)/(C+F)



BS / BSD Recoveries



Project Name: Livingston Ridge

Work Order #: 317354

Analyst: ASA

Lab Batch ID: 740722

Sample: 519579-1-BKS

Date Prepared: 11/18/2008

Batch #: 1

Project ID: 2001-11005 **Date Analyzed:** 11/18/2008

Matrix: Water

Units: mg/L		BLAN	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	PIKE / B	LANK S	PIKE DUPL	ICATE I	RECOVE	RY STUD	Y	
BTEX by EPA 8021B	Blank Sample Resuit /	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	<u>[5]</u>				
Benzene	0.0374	0.1000	0.1051	105	0.1	0.1035	104	2	70-125	25	
Toluene	QN	0.1000	0.0989	66	0.1	0.0971	97	2	70-125	25	
Ethylbenzene	0.0041	0.1000	0.0993	66	0.1	0.0971	62	2	71-129	25	
m,p-Xylenes	QN	0.2000	0.2012	101	0.2	0.1971	66	2	70-131	25	
o-Xylene	ΩÑ	0.1000	0.0943	94	0.1	0.0922	92	7	71-133	25	

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



Form 3 - MS / MSD Recoveries



Project Name: Livingston Ridge

Work Order #: 317354

Lab Batch ID: 740498

Date Analyzed: 11/17/2008

QC-Sample ID: 317192-007 S

_ Batch #:

Project ID: 2001-11005

BRB Analyst:

Matrix: Water

Date Prepared: 11/17/2008

Limits %RPD Control 25 25 25 25 25 Control Limits %R 70-125 71-129 71-133 70-125 70-131 MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY RPD ~ ~ Spiked Dup. G %R 102 96 6 86 8 Spiked Sample Duplicate Result [F] 0.1968 0.0960 0.0967 0.0936 0.1021 Spike Added 0.1000 0.1000 0.1000 0.2000 0.1000 Ξ Spiked Sample %R 101 ≘ 95 96 95 6 Spiked Sample Result 0.1010 0.0945 0.0950 0.1923 0.0916 Ō Spike Added 0.1000 0.1000 0.1000 0.2000 0.1000 Parent Sample Result ₹ 2 $\frac{1}{2}$ £ 8 g BTEX by EPA 8021B Analytes Reporting Units: mg/L Ethylbenzene m,p-Xylenes o-Xylene Benzene Toluene

Lab Batch ID: 740568

Date Analyzed: 11/18/2008

QC-Sample ID: 317382-001 S **Date Prepared:** 11/17/2008

Matrix: Water ASA Analyst: Batch #:

Flag Limits %RPD Control 25 25 25 25 Control Limits %R 70-125 71-129 70-125 70-131 MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY RPD % ~ 3 a Spiked Dup. [G] 86 96 68 68 Duplicate Spiked Sample Result [F] 0.0975 0.0898 0.1788 0.0891 Spike Added 0.1000 0.1000 0.1000 0.2000 Ξ Sample Spiked Sample Spiked . B %. 96 87 87 88 Result [C] 0.0873 0.1752 0.0955 0.0874 Spike Added [B] 0.1000 0.1000 0.1000 0.2000 Parent Sample Result ₹ 8 2 Ð 8 ON BTEX by EPA 8021B Analytes Reporting Units: mg/L Ethylbenzene m,p-Xylenes Benzene Toluene

25

71-133

86

0.0864

0.1000

85

0.0850

0.1000

o-Xylene

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

	••	ENVI	RON	MENTAL.	Бестесн	NICAL N	ND CC	NSTR	UCTIC	N. MAT	FAVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES.		CHAIN OF CUSTODY RECORD
r	L				Laborat	Laboration: XMCA	1/8	2			ANALYSIS REQUESTED	///////	Lab use only Due Date:
ပိ	<u>u</u>	HETOLOGICALISTS	Ũį		Address:								Temp. of coolers when received (C?): []
#Ice	Location	ffice Location Midland	ane		Contact								1 2 3 4 5
					Phone:_	1	-				2		Page Or
Ojec	Manag	er Coly	ė.	Te land	roject Manager Costmanine Lendon PO/SO#		2001-1605	9	15		77		
andie	ompler's Name				Sumpler	Sumpler's Signature		1	\		08		
	J	Chris Aulds	G	ds	*/		V		ı		<u></u>		
\$ a	유		量二	Project Name		£'dee	þ	ş	No/Type of Combiners	etricens	FEZZ		
Į.	a a a a a a a a a a a a a a a a a a a		COEC	O at			Start Depth End finded	₫	8=	25 5 07 07	S)		Lab Sample 10 (Lab Use Omly)
5	11/8/08	13,7	~	×	171-ME		_	3-			Ø		10-4521-01
_			Н	۲	MW-15						1		20~
		1413		۲	11-36		_						103
		1437		٥	Ph. 2-13	_							30 !
		إكما			41-mus	<u>-</u> 4							00:
		153		ر	MW-10	0	-						₩O.
		15.2	\exists		2-3E	5							10-
		123	\dashv		かって	و							60-
		1047	-		7.35	_							1.0-
7	-1	=	┪	_	2		\dashv	1			_ 		0.7
E C	am eround time	Normal	ļ	C 25% Rush	D 50% Rush		100% Rush	-					
ibula.) kg peylsi	telinquished by (Signature)	$\langle b \rangle$	I VIIIC	(CS:5)	Received by: (Signature)	(S)	ature)		Date:	Time:	NOTES:	
1	hed bedsi	eiriquished by (Signature)		D'atte:	Times:	Received by: (Signature)	7. (Sign	eture)		Date	Time:		
a de la composição de l	lished by (letinquished by (Signature)		Oate	-EMIT	Received by: (Signature)	udis) :k	(eurite		Chate	Time;		
e fina	yd bensir	telinquished by (Signature)		Dete:	Time:	Received by: (Signature)	ay: (8ign √⁄∂	1 P	3	Date:	Date: Time:	whater stores on container	or cortainers
Aatrts. Jontainer		WW - Wastewater VOA - 40 m² vial		W - Weter A/G - Ambi	W - Weter S - Sos SD - Solid A/G - Amber / Or Glass 1 Liter	pag- OS	7. 28.0%	- Glass	L - Uquid A - Air Bag 250 ml - Glass wide mouth		C - Charcoal tube P/O - Plastic or other.	BL - studge O - Oil	
Secretor 1555 C fonston	Souston Office 1555 Clay Mond, Sale 100 fouston, Texas 77043	9 te 100		Pella 1990 Pella Pella	Delias Office 8901 Carpenez Fressey, Solte 100 Dallas, Texas 79247	ey. Suite 100		£85.	Fort Worth Office 2601 Gravel Drive Fort Worth, Texas	Fort Worth Office 2601 Crawl Drive Fort Worth, Texas 76118		Austin Office 5307 industrial Oaks Bivd. # 160 Austin, Texas 78735	Midhand Office 24 Smith Rd., # 26! Midhand, Three 79705
713) 69	0-8959 Pax	713) 690-8989 Pax (713) 690-878:	, ,	(214)	630-1010 Fax	(214) 630-70	ا	(8)	268-860	Pax (817	268-8602	(\$12) 442-1122 Fax (\$12) 442-1181	(432) 664-9600 Pax (432) 684-your

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

	Variance/ Confective Action	repon- Sampi	e rog-in	
Client:	Terracon / Plains	•		
Date/ Time:	1111 03 16:55			
ab ID#:	317354			
nitials:	aL			
	Sample Rec	elpt Checklist		
#1 Temper	ature of container/ cooler?	1	No	Ī
#2 Shippin	g container in good condition?	Yes	No	

				Client	initial
#1	Temperature of container/ cooler?	Yes	No	45°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?	(68)	No	Not Present	
#5	Chain of Custody present?	Yes	No		
#6	Sample instructions complete of Chain of Custody?	Yes	No	T	
#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./ Lld	
#9	Container label(s) legible and intact?	Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	(es)	No		
#11	Containers supplied by ELOT?	Yes	No		
#12	Samples in proper container/ bottle?	Yes	No	See Below	
#13		Yes	No	See Below	
#14		Ves	No		
#15	Preservations documented on Chain of Custody?	Yes	No		
#16		Yes	No		
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below	
#18		Yes	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	Not Applicable	
#20		Yes	No	Not Applicable	

Variance Documentation

Contact: _			Contacted by:	Date/ Time:
Regarding:				
Corrective Actio	n Taken:			
Check all that A	Apply:	□ c	ee attached e-mail/ fax lient understands and would like to proceed with ana ooling process had begun shortly after sampling eve	

Andrea Lam

From: "Aulds, Chris L" <claulds@terracon.com>
To: "Andrea Lam" <andrea.lam@xenco.com>
Sent: Wednesday, November 12, 2008 1:19 PM
Subject: RE: Livingston Ridge / 317354

Yes ma'am.

Chris Aulds **Environmental Technician** Terracon 24 Smith Road, Suite 261 I Midland, Texas 79705 P 432-684-9600 | F 432-684-9608 | M 432-288-8872 claulds@terracon.com | www.terracon.com

From: Andrea Lam [mailto:andrea.lam@xenco.com] Sent: Wednesday, November 12, 2008 11:40 AM

To: Aulds, Chris L

Subject: Livingston Ridge / 317354

Chris- I just want to confirm per our phone call that there are only two sample containers per sample for this project.

Thank You. Sample Receiving / Project Assistant

Environmental Lab of Texas A Xenco Company 12600 W I-20 E Odessa, TX 79765 432-563-1800

> Terracon provides geotechnical, environmental, construction materials, and facilities consulting engineering services delivered with

reliability, responsiveness, convenience, and innovation.

This electronic communication and its affachments are forwarded to you for convenience, if this electronic transmittel contains Design Information or Recommendations and not just general correspondence, Terracon Consultants, Inc., and/or its affiliates ("Terracon") will submit a follow-up hard copy via mail or delivery for your records, and this hard copy will serve as a final record. In the event of conflict evene electronic and hard copy documents, the hard copy will govern. Disc e-mail and any attachments transmitted with it are the property of Terracon and may contain information that is confidential or otherwise protected from disclosure. The information it contains is intended solely for the use of the one to whom it is addressed, and any other recipient should destroy all copies.

11/12/2008

APPENDIX D

CD of 2008 Annual Groundwater Monitoring Report and Historical Gauging Data