1R- 463

Annual GW Mon. Report

Year: 2011

2011 ANNUAL GROUNDWATER MONITORING REPORT

D S HUGH SITE
LEA COUNTY, NEW MEXICO
PLAINS SRS NO.: 2000-10807
UL-K, SECTION 26, T21S, R37E
NMOCD NO.: IR-0463

RECEIVED
APR 2 2012
Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

PREPARED FOR

PLAINS MARKETING, L.P.

333 CLAY STREET, SUITE 1600
HOUSTON, TEXAS 77002

PREPARED BY

EARTHCON℠

Environmental Challenges
BUSINESS SOLUTIONS

4800 SUGAR GROVE BLVD., SUITE 390
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PROJECT NO. 205071.00

MARCH 2012

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ALL AMERICAN

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APR 2 2012

Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

March 29, 2012

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

Re: Plains All American – 2011 Annual Monitoring Reports
4 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:

Vacuum to Jal 14" Mainline #3	1R-455	Section 35, T21S, R37E, Lea County
Vacuum to Jal 14" Mainline #5	1R-0464	Section 2, T22S, R37E, Lea County
DS Hugh	1R-0463	Section 26, T21S, R37E, Lea County
Hugh Gathering	AP-0041	Section 11, T21S, R37E, Lea County

Earthcon 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 Earthcon 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

Jason Henry
Remediation Coordinator
Plains All American

CC: Geoff Leking, NMOCD, Hobbs, NM

Enclosures

TABLE OF CONTENTS

FIGURES

TABLES

1.0 INTRODUCTION AND OBJECTIVES

1.1 Objectives and Site Background

On November 10, 2000, a 4 inch steel pipeline at the D S Hugh 4 inch Gathering line Site (site) released approximately 20 barrels of crude oil into the subsurface. This pipeline was formerly owned by EOTT Energy, LLC (EOTT) and is currently owned by Plains Pipeline, L.P. (Plains). The site is located in Unit Letter K, T21S, R37E, Section 26 of Lea County, New Mexico, approximately two miles east of Eunice, New Mexico (**Figure 1**) or more specifically at latitude 32° 26' 48" N and longitude 103° 08' 07" W. Approximately five barrels of product were reported to be recovered. The affected area was reported to be approximately 200 feet by 15 feet, and product stayed within the pipeline right of way. The leak that occurred at the site on November 10, 2000, was apparently caused by corrosion of a pipeline. The release was reported by EOTT to Ms. Donna Williams at the New Mexico Oil Conservation Division (NMOCD) on November 10, 2000 at 2:25 P.M. Approximately five barrels of product were reported as recovered out of the approximately 20 barrels reportedly released into the subsurface.

The leak was repaired and affected soil was excavated and temporarily placed on a plastic liner. The initial response notification form (Form No. C-141), prepared by Plains, provides documentation of reporting the release to Larry Johnson with the New Mexico Oil Conservation Division (NMOCD). Initial soil remediation activities were completed by Environmental Plus Inc. In April 2005, EarthCon Consultants, Inc. (EarthCon; formerly Premier Environmental Services, Inc.) personnel completed a site investigation. Details can be found in EarthCon's *2005 Annual Report*.

1.2 Previous Remedial Responses and Environmental Investigations

Site delineation activities in 2005 included the installation of five soil borings and collection of soil samples within and adjacent to the flow path of the release. Based on findings of the September 2005 investigation, and the surface expression of the release, three groundwater monitor wells (MW-1 through MW-3) were installed in December 2005. Total Petroleum Hydrocarbon (TPH) concentrations in soil from monitor well MW-1 were above 100 mg/kg from the surface to the first water bearing zone at a depth of 45 feet below ground surface (bgs). A phase-separated hydrocarbon (PSH) sheen was observed in groundwater samples from monitor well MW-1. In May 2006, further soil investigation was conducted by EarthCon to delineate the extent of hydrocarbon contamination in soil. During this investigation, monitor wells MW-4 through MW-7 were installed.

Soil and groundwater delineation continued with a groundwater investigation in March 2006. Additional soil and groundwater investigation was conducted in May 2006 to delineate the extent of hydrocarbon contamination in the groundwater. During this investigation, monitor wells MW-4 through MW-7 were advanced (**Figure 2**). A *Soil Remediation Plan* was submitted to and approved by the NMOCD in May 2006. The objective of the *Soil Remediation Plan* was to excavate the most contaminated soil, isolate and control residual chemicals of concern

(COCs) in the soil and to prevent further impact to groundwater by the placement of an impermeable liner at the base of the excavation. The remediation plan was implemented in October 2006 and a *Soil Closure Report* was submitted in March 2007. Details of the activities can be found in the following reports submitted to the NMOCD:

- April 13, *2006 Groundwater Delineation Investigation* – March 2006 (letter report to Plains)
- May 2006 *Soil Remediation Plan*
- June 6, 2006 *Soil Investigation Results* (letter report to Plains)
- March 2007 *Soil Closure Report*

A quarterly groundwater monitoring program for this site was implemented in 2006 and continues to date. Groundwater PSH recovery was conducted on a weekly basis at MW-1 and on a monthly basis for the remaining wells, MW-2 through MW-7. MW-4, which has previously exhibited measurable amounts of PSH was measured weekly at the beginning of 2011, but when it showed no PSH or PSH sheen, was reduced to being measured on a monthly basis. Approximately 1,087.30 gallons of groundwater containing dissolved phase hydrocarbons and 19.45 gallons of entrained PSH were recovered from monitor well MW-1 in 2011. Additionally, at the request of NMOCD, the wells with measurable phase-separated hydrocarbon (PSH) or sheen were sampled annually. These samples were analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) in the second quarter of 2011.

1.3 Regulatory Framework

Based on standards outlined in New Mexico Water Quality Control Commission (WQCC), the remediation criteria for groundwater at the site are as follows:

COC	Limit (mg/L)
Benzene	0.010
Toluene	0.750
Ethylbenzene	0.750
Total Xylenes	0.620
PAHs[1,2]	0.03
BEnzo-a-pyrene[2]	0.0007

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

In addition to using these concentrations as the target cleanup goals for groundwater at the site, PSH and dissolved-phase hydrocarbons removal will be an integral part of on-going remediation activities at the site.

1.4 Limitations

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

2.0 GROUNDWATER ASSESSMENT AND RESULTS

2.1 Groundwater Sample Methodology

Activities conducted at the D S Hugh site in 2011 primarily consisted of gauging wells for groundwater levels, determining the presence or absence of PSH, and recovering PSH using hand bailing and submersible pumps in monitor wells. Groundwater sampling of wells not exhibiting PSH (MW-2 through MW-7) was completed to evaluate the extent of the dissolved-phase hydrocarbon plume on a quarterly basis. MW-1 is sampled annually, in May of 2011.

Measurements of the depth to groundwater and product thickness in monitor well MW-1 (the only well with hydrocarbon sheen or PSH) was completed during the weekly PSH recovery and groundwater sampling events. Monitor wells MW-2 through MW-7 were gauged on a monthly basis for depth to groundwater. Wells were gauged using an oil/water interface probe. Well locations are shown on **Figure 2**.

Groundwater level elevations and the presence of PSH (if any) were noted for each well. In cases where no measurable PSH was detected by the interface probe, the down-hole sensor of the probe was examined for the presence of PSH upon removal from the well. Only MW-1 contained a measurable PSH thickness or hydrocarbon sheen during 2011. Starting in the second quarter of 2008, all monitor well(s) with PSH or a PSH sheen were required to be sampled annually. Groundwater samples were collected from these wells in the second quarter of 2011. These annual groundwater samples were then analyzed for BTEX constituents. In addition, PAH groundwater samples were collected from well MW-1 and MW-4 on December 7, 2011 per the request from the New Mexico Oil Conservation Division (OCD) received on November 23, 2011.

Groundwater monitor wells not exhibiting PSH or hydrocarbon sheen were gauged monthly and sampled quarterly. After collecting and recording groundwater level, each well was purged with a clean electric submersible pump, and then groundwater samples were collected using a new dedicated disposable bailer.

Groundwater samples were poured directly from the disposable bailers into the appropriate laboratory-supplied sample containers. The sample containers were then packaged to prevent breakage, placed on ice in a cooler, and shipped to ALS Environmental of Houston, Texas for analysis. The groundwater samples were analyzed for BTEX by EPA Method SW 846-8021B and PAHs by EPA Method SW 8270.

2.2 Groundwater Gauging

Table 1 summarizes groundwater gauging (elevation and PSH thickness) measurements taken before each quarterly groundwater sampling event in 2011. In addition, weekly (or occasionally semi-weekly) groundwater elevation and PSH thickness measurements were recorded prior to and after PSH recovery from the well containing PSH (MW-1). Monthly measurements were also taken from all wells. Complete historical groundwater elevation and PSH thickness measurements since September 14, 2005 are presented in **Table 2**.

2.3 Groundwater Gradient and Flow Direction

Using the groundwater gauging data as described in **Section 2.2** and summarized in **Tables 1** and **2**, groundwater gradient maps were prepared and are included as **Figures 3A** through **3D**. The calculated groundwater gradient and estimated groundwater flow direction are based on the gauging data obtained on February 24, May 31, August 29, and November 28, 2011 (see **Table 1**). This indicates a relatively flat groundwater gradient with no significant fluctuations during 2011. The groundwater flow, based on the gauging data collected in monitor wells MW-4 and MW-7 during 2011, was trending east-southeast at an approximate average gradient of 0.0032 to 0.0034 feet across the site. The groundwater gradient and flow direction across the site during 2011 were similar to the gradient and direction observed during the previous four years.

2.4 Groundwater Analytical Results

Groundwater at the site was sampled on February 24, May 31, August 29, and November 28 during 2011. Quarterly sampling and analysis from monitor wells not containing PSH (monitor wells MW-2 through MW-7) was conducted in 2011. Additionally, MW-1 was sampled in the second quarter of 2011. Groundwater samples from these wells were analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) constituent concentrations.

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

After purging was completed, groundwater samples were collected using a new disposable bailer. First quarter groundwater samples collected during 2011 were placed in laboratory-provided containers, placed in a cooler with ice, and shipped ALS Laboratory Group (ALS) in Houston Texas for chemical analysis. All purge water was placed in labeled 55-gallon drums and subsequently transferred into the 1,000 gallon on-site storage tank.

Analytical data reported for these groundwater samples indicate that benzene concentrations exceed NMOCD remediation criteria in groundwater samples collected from monitor well MW-4 during the first three quarterly sampling events and at MW-1 during the second quarter sampling event of 2011. Total Xylenes in the MW-1 also exceeded NMOCD remediation criteria during the lone sampling event of this well. All other BTEX constituent concentrations were reported below NMOCD remediation criteria for the wells not containing PSH sampled. Except constituents in MW-1 and MW-4, BTEX concentrations were below laboratory Method Detection Limits (MDLs) for all other wells (MW-2, MW-3, MW-5, MW-6, and MW-7) in 2011.

The 2011 analytical results are presented in **Table 3,** and **Table 2.1** below summarizes the COC concentrations in which a NMOCD Remediation Criteria exceedance was observed. COC concentrations reported in exceedance of NMOCD standards are marked in **bold.**

Table 2.1 2011 COC NMOCD Exceedances						
Well Number	Sample Date	Sample ID	SW 846-8021B			
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
			NMOCD Remediation Criteria			
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
MW-1	05/31/11	1106003-01	**0.4**	0.36	0.3	**0.74**
MW-4	02/24/11	1102759-03	**0.020**	0.030	0.096	0.26
MW-4	05/31/11	1106003-04	**0.024**	0.022	0.079	0.28
MW-4	08/29/11	1108973-03	**0.014**	0.0035 P	0.11	0.28

Note:
MW-1 only sampled during the second quarter due to presence of hydrocarbon sheen
P = Dual Column results percent difference > 40%

Analytical results reported for the groundwater samples collected at MW-2, MW-3, MW-5, MW-6, and MW-7 displayed BTEX constituent concentrations below laboratory MDLs for all four quarters. Analytical results show that MW-4 had exceeded the NMOCD criteria for Benzene in all quarters except the fourth quarter of 2011. Benzene, Ethylbenzene, and Total Xylenes at MW-4 were detected above laboratory MDLs, but did not exceed NMOCD remediation criteria during the fourth quarter of 2011. Toluene was not detected above laboratory MDLs for this sample. MW-1 displayed Benzene and Total Xylenes concentrations above NMOCD standards and detections of Toluene and Ethylbenzene above laboratory MDLs but below NMOCD remediation criteria during the second quarter sampling event, the only event for this well.

A letter was received from the NMOCD on November 23, 2011 requesting groundwater samples from MW-1 and MW-4 be analyzed on an annual basis for PAHs. Samples from MW-1 and MW-4 were collected in December 2011 and analyzed for PAHs. Detections of Napthalene, Acenaphthylene, Acenaphthene, Flourene, Phenanthrene, Anthracene, and Chrysene were found for MW-1. The only detection found in MW-4 was for Naphthalene. However, none of the detections in either well exceeded the WQCC standards.

Groundwater analytical results for 2011 can be found in **Table 3** and all historical sampling results can be found in **Table 4**. **Figures 4A** through **4D** depict the BTEX concentrations detected in groundwater from the wells for each of the four quarterly events. A copy of the laboratory analytical data package is included in **Appendix A**.

2.5 Groundwater Waste Disposal

Purge water from well sampling at wells MW-1 and MW-4, is placed in the 1,100-gallon above ground storage tank. These liquids are vacuumed from the tank and transported offsite for disposal by Key Energy Services of Hobbs, New Mexico via vacuum truck service.

3.0 PSH RECOVERY

3.1 PSH Recovery Methodology

In addition to collecting groundwater samples, EarthCon performed weekly visits to the site to gauge and recover PSH from MW-1, the well with measurable PSH. Measurements to PSH and water levels were recorded during each site visit (see **Table 2**). PSH recovery activities were completed on a weekly basis using submersible pumps, hand bailer and/or absorbent socks. Routine PSH recovery activities typically consisted of the removal of less than 1 gallon of PSH and 10 to 30 gallons of groundwater (with possible dissolved-phase hydrocarbons) from MW-1.

3.2 2011 PSH Recovery

During 2011, measurable PSH was observed in monitor well MW-1. The PSH observed in MW-1 indicated a PSH thickness during 2011 ranging from 0.09 to 1.52 feet with an average of 0.62 feet.

Weekly PSH recovery at the site in 2011 led to the removal of approximately 19.45 gallons of PSH and 1,087 gallons of groundwater containing dissolved phase hydrocarbons with entrained PSH from the three affected recovery wells. The PSH recovery process consists of pumping total fluids using electric pumps and manual recovery using bailers.

3.3 PSH Waste Generated

Purge water from PSH and affected groundwater recovery from wells MW-1 and MW-4 is placed in the 1,100-gallon above ground storage tank. These liquids are vacuumed from the tank and transported offsite for disposal by Key Energy Services as previously described in **Section 2.5**.

4.0 MONITORED NATURAL ATTENUATION

4.1 Regulatory Framework for Natural Attenuation

Monitored Natural Attenuation (MNA) is defined by the New Mexico Environmental Department in 20.5.13 NMAC as "a methodology for remediation that relies upon a variety of naturally occurring chemical, physical and biological processes to achieve target concentrations in a manner that is equally as protective of public health, safety and welfare, and the environment as other methods and that is accompanied by a program of monitoring to document the progress and results of the above mentioned processes."

As part of the MNA process several lines of evidence need to be evaluated. The general lines of evidence are listed below:

- **Primary Lines of Evidence (PLOE):** Relies on use of historical groundwater data that demonstrate a clear trend of stable or decreasing COC concentrations over time and with distance away from the source at appropriate monitoring or sampling points.
- **Secondary Lines of Evidence (SLOE):** Uses geochemical indicators to document certain geochemical signatures or "footprints" in the groundwater that demonstrate (indirectly) the type of natural attenuation process (es) occurring at the affected property and the destruction of COCs; or uses distance-based/time-based/biodegradation rate calculations to demonstrate attenuation.
- **Other Lines of Evidence (OLOE):** Most often consists of predictive modeling studies and other lab/field studies that demonstrate an understanding of the natural attenuation process(es) occurring at the affected property and their effectiveness in controlling Protective Concentration Level Exceedance (PCLE) zone migration and decreasing COC concentrations.

4.2 Groundwater Plume Stability and Natural Attenuation

Benzene concentrations of 0.4 mg/L, were detected in source area well MW-1 from the May 31, 2011 sampling event. Note this was the only sampling event of 2011 for this well.

The benzene concentrations reported from 2006 through 2011 for MW-4 (the closest monitor well downgradient of the soil removal areas) indicate an increase in benzene concentration from 2006 to 2008 and then an overall decrease in concentration since 2008. Most often, concentrations reported for MW-4 have been detected above the NMOCD criteria. However, in November 2011, the benzene concentration was reported below the NMOCD criteria for the first time. Toluene, ethylbenzene and total xylenes have been below NMOCD criteria in MW-4 samples since March 2006. Additionally, toluene was not detected above laboratory MDLs during the November 2011 sampling event. Since August 2010, all BTEX constituents have

been either undetected or below NMOCD criteria in the samples collected from monitor wells MW-6 and MW-7 (wells furthest downgradient of the soil removal areas).

Figures 5 through **10** depict iso-concentration maps of dissolved benzene in groundwater for the years 2006 trough 2011, respectively. These figures illustrate the significant decrease in the areal extent of the benzene plume over the past five years. Plume area reduction is discussed further in **Section 4.3**.

Plume stability analysis was completed for the data obtained from the years 2006 through 2011 to establish baseline benzene plume characteristics. Comparisons between the 2006 through 2011 plume characteristics indicate that there is a decrease in the areal extent of the plume. The calculated benzene plume mass and benzene plume average concentration for 2011 indicated a decrease compared to the plume characteristics calculated for 2010. The calculated benzene plume mass and benzene plume average concentration for 2010 indicate a slight increase compared to the plume characteristics calculated for 2006 through 2009. Additional sampling events will be necessary to complete a statistical evaluation of the data and establish trends in the plume characteristics calculated. Further details and the findings of the plume stability study are presented below in **Sections 4.2** and **4.3** and illustrated in **Figures 5** through **12**.

4.3 Groundwater Plume Stability and Concentration Trends

Plume stability analysis was completed from the dissolved benzene data obtained in 2006 through 2011. This analysis established the following calculated time-dependent trends for the benzene plume:

- Plume area (Refer to **Figure 11**);
- Average concentration (Refer to **Figure 11**);
- Dissolved benzene mass (Refer to **Figure 11**) and;
- The center of mass of the dissolved benzene (Refer to **Figure 12**)

The above characteristics were calculated for each event using numerical methods and engineering principles

Figure 11 illustrates the following:

- The 2011 plume area (0.22 acres) has been reduced by more than 35 percent since 2010 and has been reduced by approximately 42 percent from a 2008 high of 0.38 acres;
- The average benzene concentration has shown an overall decrease and;
- The 2011 dissolved benzene mass (0.07 pounds) has been reduced by over 41 percent since 2010 and has been reduced by 75 percent from a 2008 high of 0.28 pounds.

Figure 12 illustrates the following associated with the center of the benzene plume mass:

- It has shifted in a maximum range of only approximately 30 feet (up and down-gradient) over the past five years;
- It has not migrated more than 25 feet down-gradient of the most down-gradient edge of the soil removal area and;
- It has receded approximately 30 feet up-gradient between 2006 and 2011.

The plume stability analysis completed for the site includes the development of benzene concentration isopleth maps for the years 2006 through 2011. An average of the benzene concentrations reported in the four quarterly groundwater sampling events was used for all the wells with no PSH. Since MW-1 has only been sampled during the second quarter groundwater sampling events in 2006, 2007 2008, 2009, 2010, and 2011 (due to the presence of PSH) the benzene concentrations reported during these six sampling events were used in the evaluation of plume characteristics. The plume characteristics such as plume area, average concentration, plume mass, and plume centers of mass were calculated for each event using numerical methods and engineering principles.

A summary of the plume characteristics such as the plume mass, plume area and average concentration of benzene in the plume are presented in **Figure 11**. The plume centers of mass for the six years are presented in **Figure 12**. A slight shift to the west of the plume center of mass was observed from 2010 to 2011. The benzene isopleths maps for 2006 through 2011 are presented in **Figures 5** through **10** respectively.

The current area affected by the benzene plume, based on the quarterly groundwater data collected from MW-1 in 2011 is approximately 42 percent less than that of 2008 (the largest plume area to date). The plume average concentration calculated for 2011 is 0.039 mg/L, compared to a high of 0.107 mg/L calculated in 2007. The total mass of the benzene plume in 2011 is approximately 0.21 lbs lower than the total mass computed in 2008 (the highest calculated mass to date). **Table 4.1** below provides a summary of plume characteristics.

Table 4.1. Summary of Plume Stability Characteristics

Date	Area (Acres)	Average Conc. (µg/l)	Mass (lbs)
2006	0.33	78	0.21
2007	0.30	107	0.26
2008	0.38	88	0.28
2009	0.14	34	0.04
2010	0.34	45	0.12
2011	0.22	39	0.07

The benzene plume area computed from the isopleth maps indicate that the areal extent of the benzene plume at the site is decreasing overall. In 2010, the plume area, average concentration, and plume mass indicate an increase compared to the year 2009. The increase in plume average concentration and plume mass could be attributable to the increase in the benzene concentrations reported in the groundwater sample collected from MW-1. The increase in concentration could be due to a slight increase in the water levels at the site during the end of first quarter and through the second quarter of 2010, or due to entrained PSH in the groundwater samples. However, the plume concentration and plume mass trend during 2011 continues to decline.

5.0 CONCLUSIONS

5.1 Findings

During 2011, groundwater monitoring was conducted on a quarterly basis and PSH recovery continued weekly through manual bailing and use of electric pumps. This report documents the results of the quarterly groundwater sampling events on-going at the site, and the volume of PSH and dissolved phase hydrocarbon recovered in 2011. A summary of the results of these activities is as follows:

- PSH was identified in MW-1 and MW-4. The measured PSH thickness is observed to be in a general increasing trend.
- Groundwater analytical results for wells without PSH show that BTEX concentrations remained below the NMOCD remediation criteria throughout 2011 except at MW-4. Benzene exceeded remediation criteria at MW-4 during the first three quarters, but not the fourth quarter of 2011. Additionally, MW-1 exceeded the NMOCD remediation criteria for Benzene and Total Xylenes. MW-1 was only sampled during the second quarter due to the presence of PSH.
- A total volume of approximately 1,087.30 gallons of groundwater containing dissolved phase hydrocarbon and 19.45 gallons of entrained PSH were removed during 2011.
- Plume stability analysis was completed to establish benzene plume characteristics using the 2006 through 2011 benzene concentration data. The initial plume characteristics obtained from 2006 through 2010 indicated a decreasing benzene plume area, plume mass and average plume concentration. These characteristics, when compared to the 2011 plume characteristics, indicate that the areal extent of the plume is shrinking.

5.2 Recommendations

Based on PSH recovery and groundwater sampling completed during 2011 (and previously) at the site, EarthCon recommends the following:

- Continue weekly PSH recovery operations through removal of total fluids using manual bailers, electric pumps, and absorbent socks in wells with PSH as necessary, with monthly gauging and quarterly groundwater sampling to monitor hydrocarbons in groundwater.
- Continue to sample groundwater quarterly at wells MW-2 through MW-7.
- Continue to sample groundwater annually MW-1.
- Complete plume stability analysis and data evaluation for the quarterly data obtained during the 2012 sampling events. Perform a statistical trend analysis using Mann-Kendall Test and regression analysis on the calculated plume characteristics to assess statistical significance of the benzene plume stability trends observed. A summary of the updated plume stability study will be presented in the 2012 Annual Report.

FIGURES

Eunice Quadrangle
32°26'48"N Latitude & 103°08'07"W Longitude

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

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Figure 1
Site Location Map
D.S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 203047	DATE: 12/11

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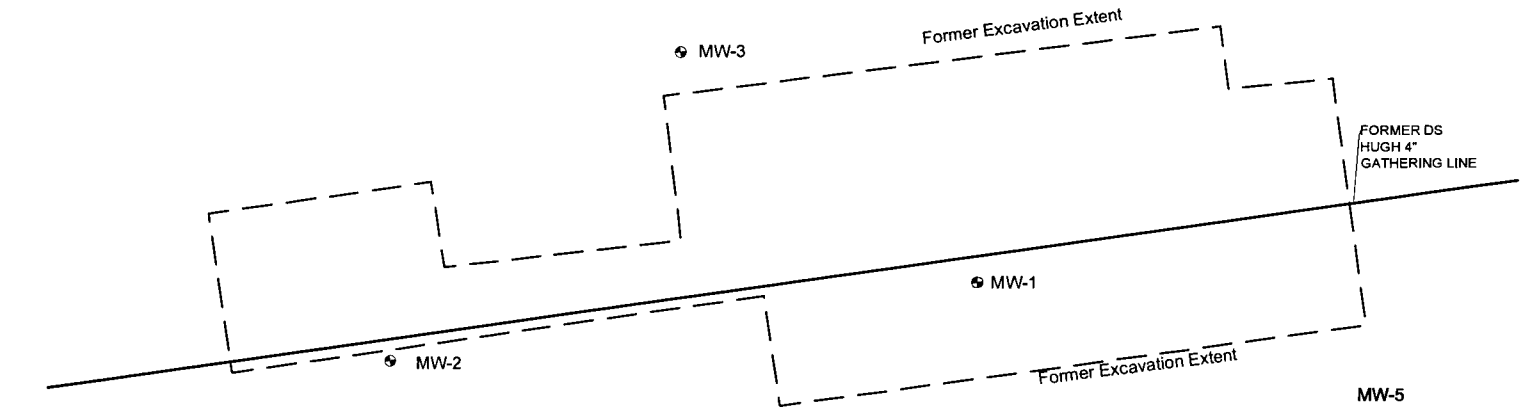

LEGEND:

MW- - MONITOR WELL LOCATIONS

- - - - FORMER EXCAVATION EXTENT

0 40

FEET

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Figure 2
Site Map
D.S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205071.00 | DATE: 12/11

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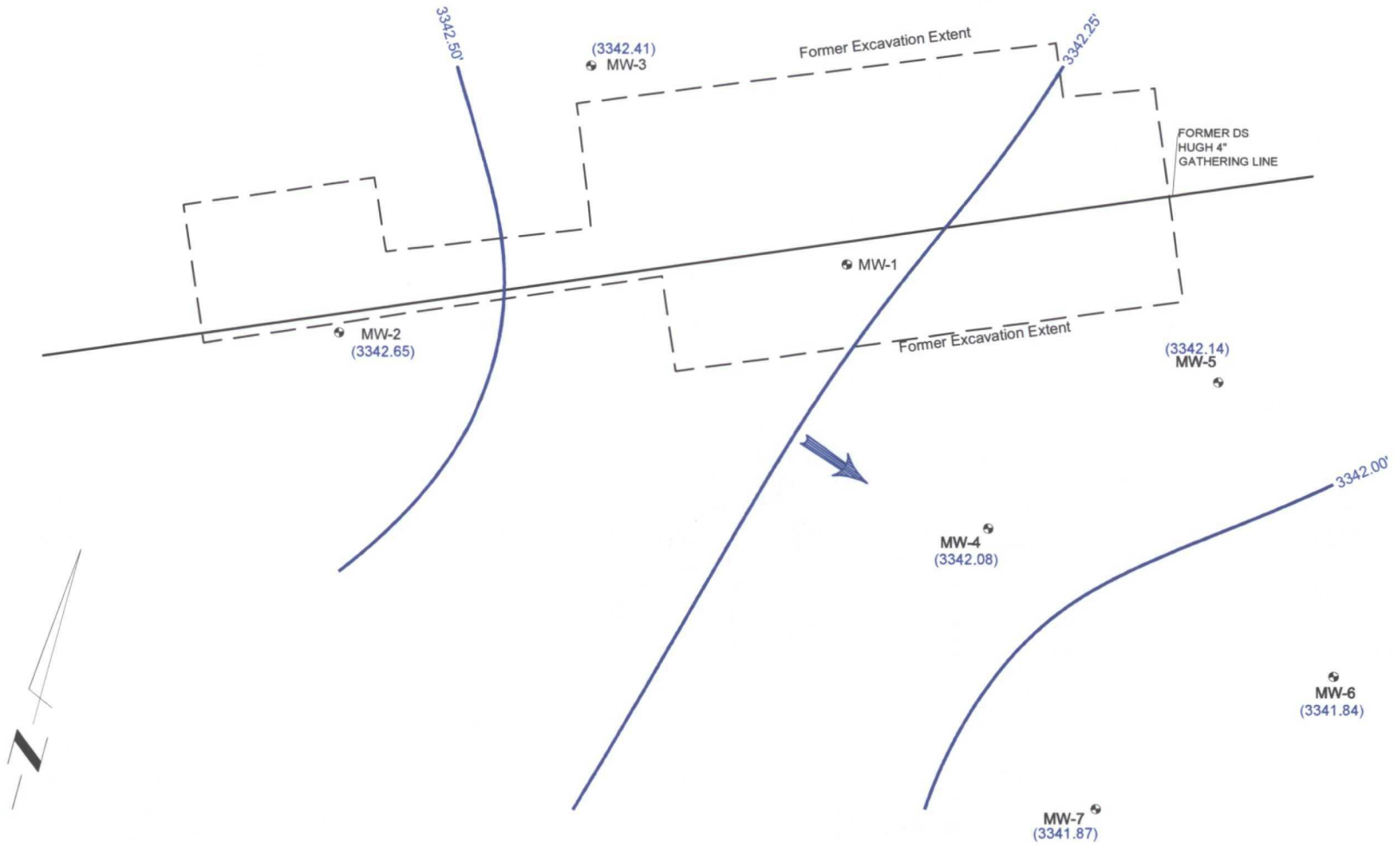

LEGEND:

- MW- - MONITOR WELL LOCATIONS
- — — — - FORMER EXCAVATION EXTENT
- (3343.05) - Corrected Ground Water Elevation, ft.
- –3342.15– - Ground Water Elevation Contour, ft. Contour Interval=0.25 ft.
- → - Apparent Ground Water Flow Direction

Note: MW1 not used to contour due to PSH in well.

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Figure 3A
1st Quarter 2011 - Groundwater Gradient Map
February 22, 2011
D.S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205071.00 | DATE: 12/11

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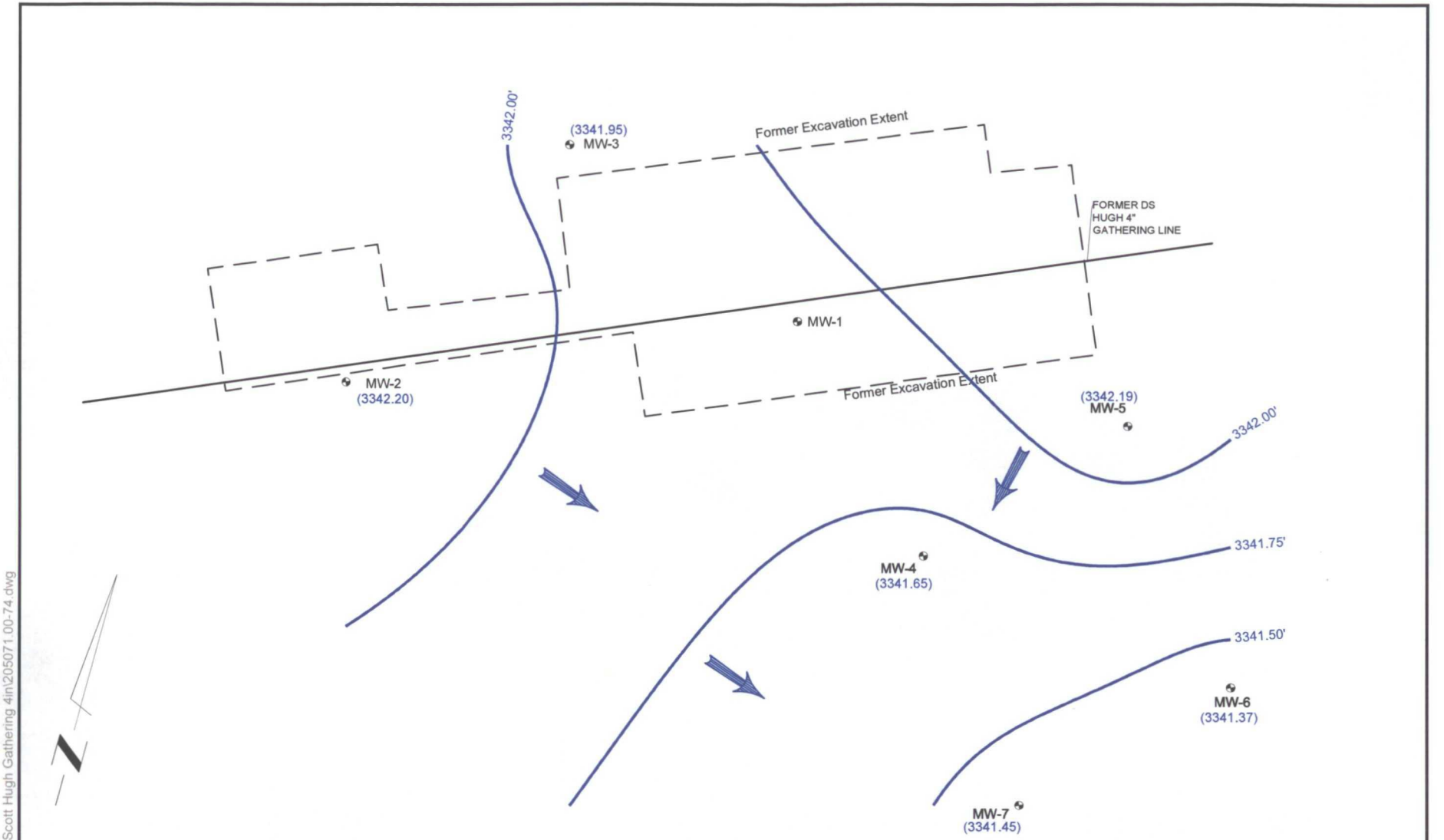

LEGEND:

- MW- - MONITOR WELL LOCATIONS
- — — — - FORMER EXCAVATION EXTENT
- (3343.05) - Corrected Ground Water Elevation, ft.
- –3342.15– - Ground Water Elevation Contour, ft. Contour Interval=0.25 ft.
- → - Apparent Ground Water Flow Direction

Note: MW1 not used to contour due to PSH in well.

0 40
FEET

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Figure 3B
2nd Quarter 2011 - Groundwater Gradient Map
May 31, 2011
D.S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205071.00 | DATE: 12/11

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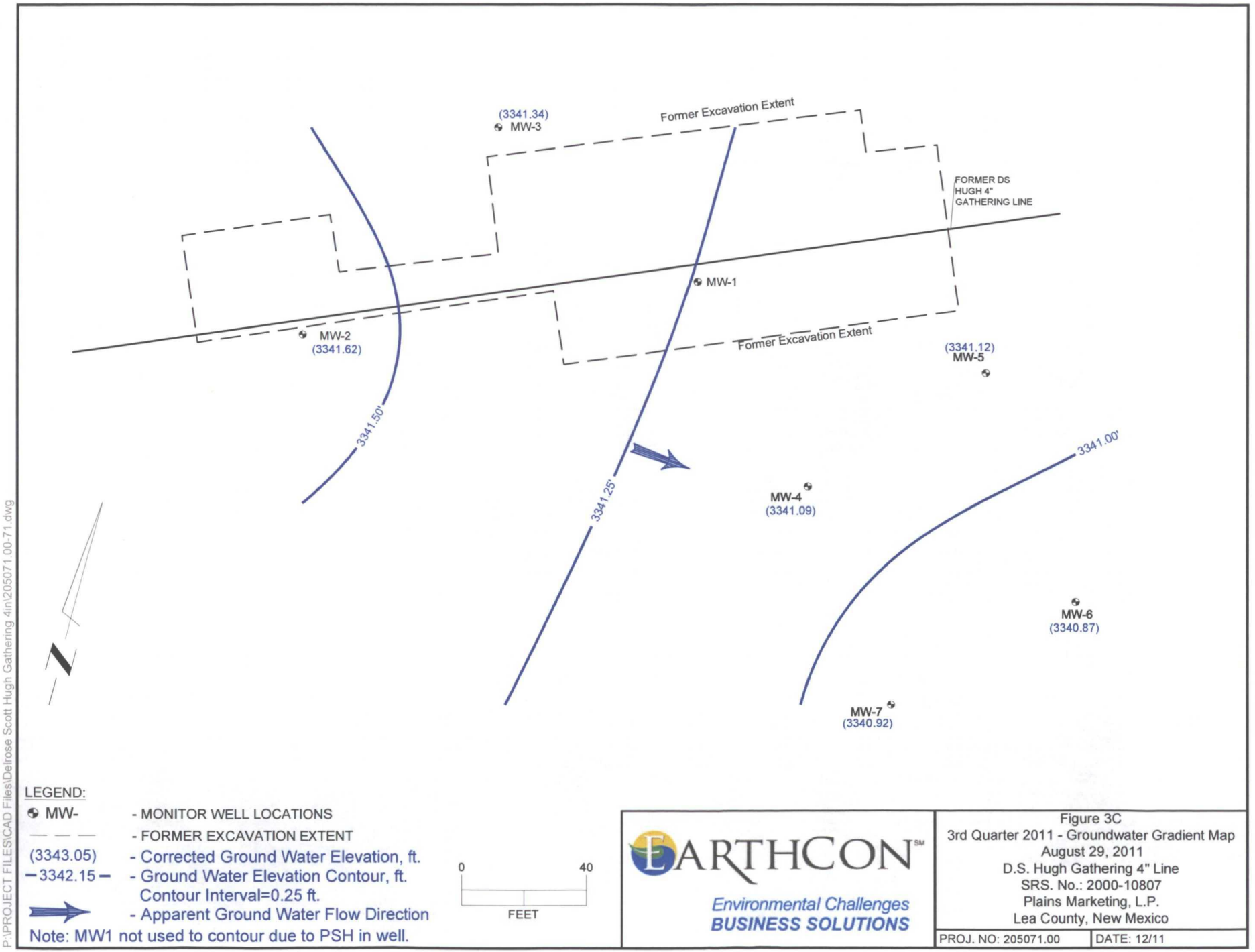
(3341.34)
MW-3
Former Excavation Extent
FORMER DS
HUGH 4"
GATHERING LINE
MW-1
MW-2
(3341.62)
Former Excavation Extent
(3341.12)
MW-5
3341.50'
3341.25'
3341.00'
MW-4
(3341.09)
MW-6
(3340.87)
MW-7
(3340.92)
N
LEGEND:
MW- - MONITOR WELL LOCATIONS
- - - - FORMER EXCAVATION EXTENT
(3343.05) - Corrected Ground Water Elevation, ft.
3342.15 - Ground Water Elevation Contour, ft.
Contour Interval=0.25 ft.
- Apparent Ground Water Flow Direction
Note: MW1 not used to contour due to PSH in well.
0
40
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Environmental Challenges
BUSINESS SOLUTIONS
Figure 3C
3rd Quarter 2011 - Groundwater Gradient Map
August 29, 2011
D.S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Plains Marketing, L.P.
Lea County, New Mexico
PROJ. NO: 205071.00
DATE: 12/11
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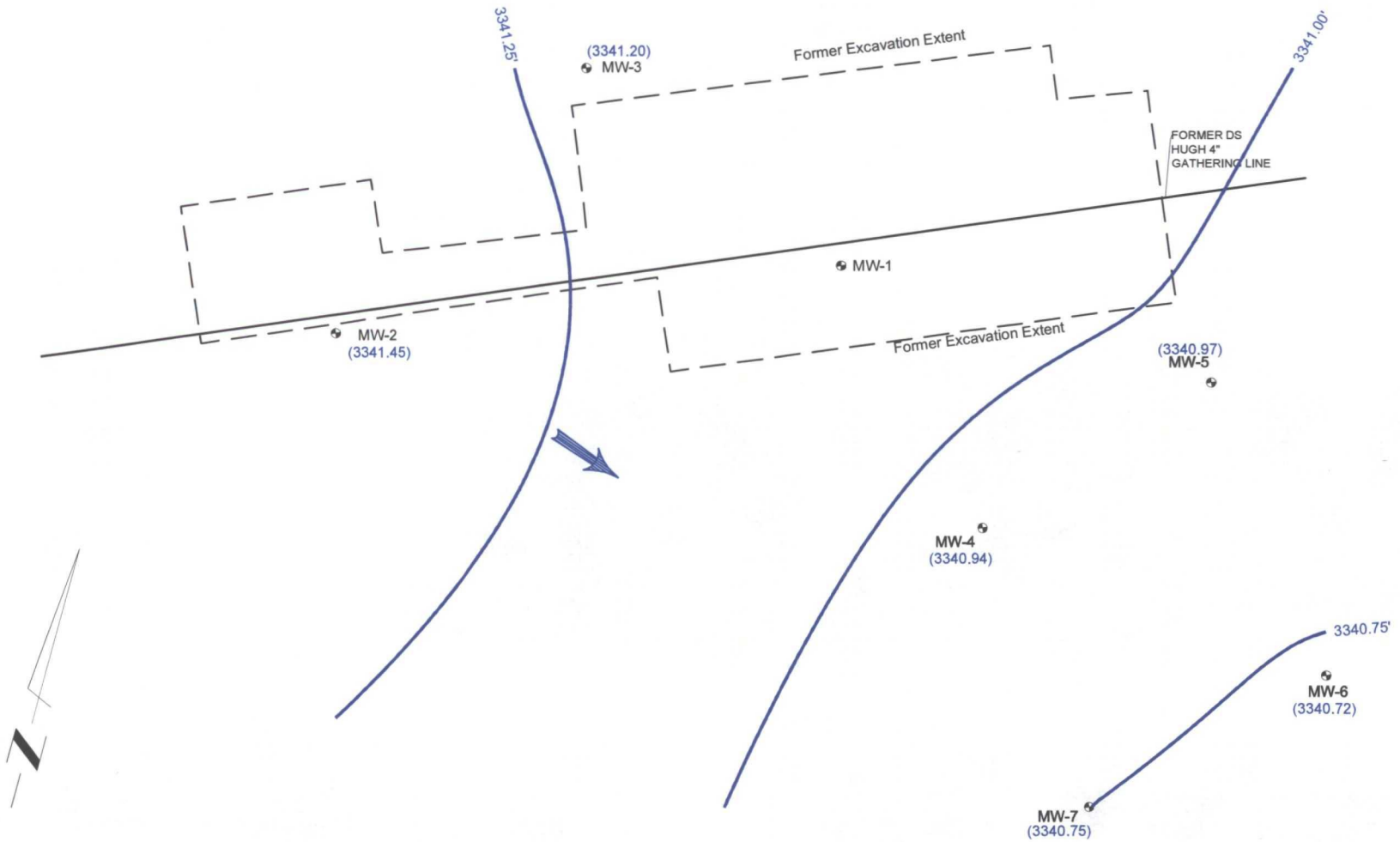

LEGEND:

- MW- - MONITOR WELL LOCATIONS
- - - - - - FORMER EXCAVATION EXTENT
(3343.05) - Corrected Ground Water Elevation, ft.
–3342.15– - Ground Water Elevation Contour, ft.
Contour Interval=0.25 ft.
- Apparent Ground Water Flow Direction

Note: MW1 not used to contour due to PSH in well.

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Environmental Challenges
BUSINESS SOLUTIONS

Figure 3D
4th Quarter 2011 - Groundwater Gradient Map
November 28, 2011
D.S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205071.00 | DATE: 12/11

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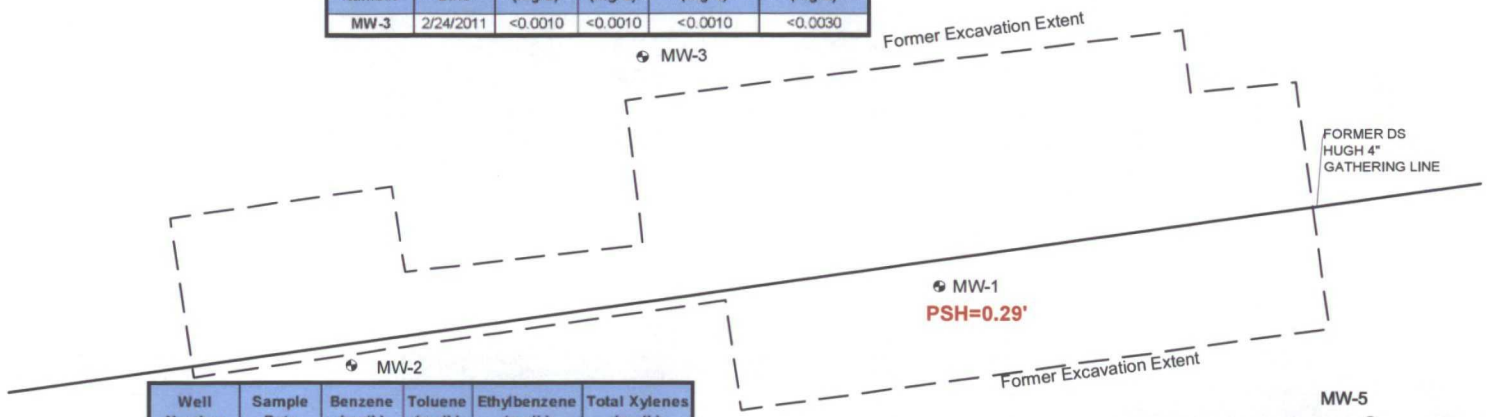

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-3	2/24/2011	<0.0010	<0.0010	<0.0010	<0.0030

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-2	2/24/2011	<0.0010	<0.0010	<0.0010	<0.0030

MW-5

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-5	2/24/2011	<0.0010	<0.0010	<0.0010	<0.0030

MW-4

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-4	2/24/2011	**0.02**	0.03	0.096	0.26

MW-6

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-6	2/24/2011	<0.0010	<0.0010	<0.0010	<0.0030

MW-7

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-7	2/24/2011	<0.0010	<0.0010	<0.0010	<0.0030

LEGEND:

MW- - Monitor Well Location

- - - - Former Excavation Extent

PSH=0.01' - Phase Separated Hydrocarbon Thickness (feet)

Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
NMOCD Remediation Criteria			
0.01	0.75	0.75	0.62

Concentrations in **BOLD** exceed the NMOCD Remediation Criteria Standards for the Site.

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Environmental Challenges
BUSINESS SOLUTIONS

Figure 4A
1st Quarter 2011 - Groundwater Analytical Map
February 24, 2011
D.S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205071.00 | DATE: 12/11

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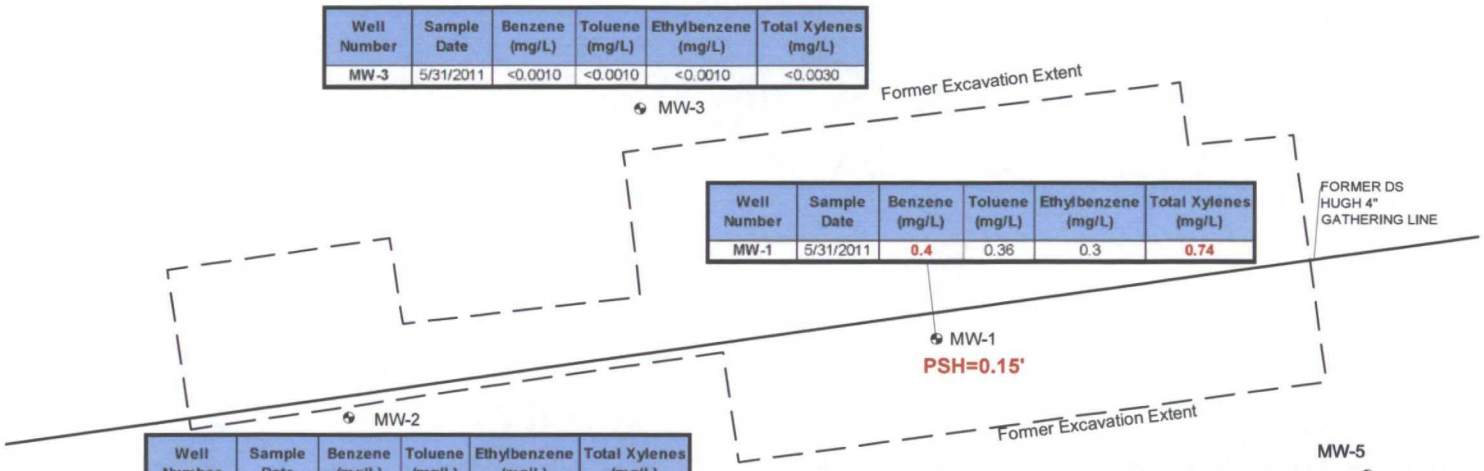

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-3	5/31/2011	<0.0010	<0.0010	<0.0010	<0.0030

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-1	5/31/2011	**0.4**	0.36	0.3	**0.74**

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-2	5/31/2011	<0.0010	<0.0010	<0.0010	<0.0030

MW-5

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-5	5/31/2011	<0.0010	<0.0010	<0.0010	<0.0030

MW-4

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-4	5/31/2011	**0.024**	0.022	0.079	0.28

MW-6

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-6	5/31/2011	<0.0010	<0.0010	<0.0010	<0.0030

MW-7

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-7	5/31/2011	<0.0010	<0.0010	<0.0010	<0.0030

LEGEND:

MW- - Monitor Well Location

- - - - - - Former Excavation Extent

PSH=0.01' - Phase Separated Hydrocarbon Thickness (feet)

Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
NMOCD Remediation Criteria			
0.01	0.75	0.75	0.62

Concentrations in **BOLD** exceed the NMOCD Remediation Criteria Standards for the Site.

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Environmental Challenges
BUSINESS SOLUTIONS

Figure 4B
2nd Quarter 2011 - Groundwater Analytical Map
May 31, 2011
D.S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205071.00 | DATE: 12/11

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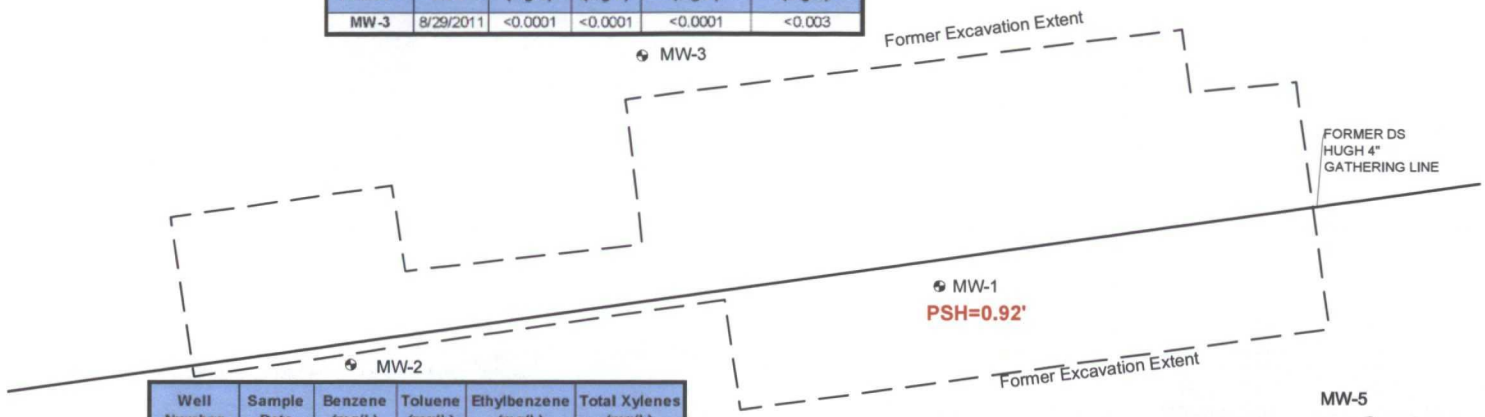
Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-3	8/29/2011	<0.0001	<0.0001	<0.0001	<0.003



Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-2	8/29/2011	<0.0001	<0.0001	<0.0001	<0.003

MW-5

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-5	8/29/2011	<0.0001	<0.0001	<0.0001	<0.003 P

MW-4

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-4	8/29/2011	**0.014**	0.0035 P	0.11	0.28

MW-6

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-6	8/29/2011	<0.0001	<0.0001	<0.0001	<0.003

MW-7

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-7	8/29/2011	<0.0001	<0.0001	<0.0001	<0.003

LEGEND:

MW- - Monitor Well Location

— — — - Former Excavation Extent

PSH=0.01' - Phase Separated Hydrocarbon Thickness (feet)

Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
NMOCD Remediation Criteria			
0.01	0.75	0.75	0.62

Concentrations in **BOLD** exceed the NMOCD Remediation Criteria Standards for the Site.

0 40

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Environmental Challenges
BUSINESS SOLUTIONS

Figure 4C
3rd Quarter 2011 - Groundwater Analytical Map
August 29, 2011
D.S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205071.00 | DATE: 12/11

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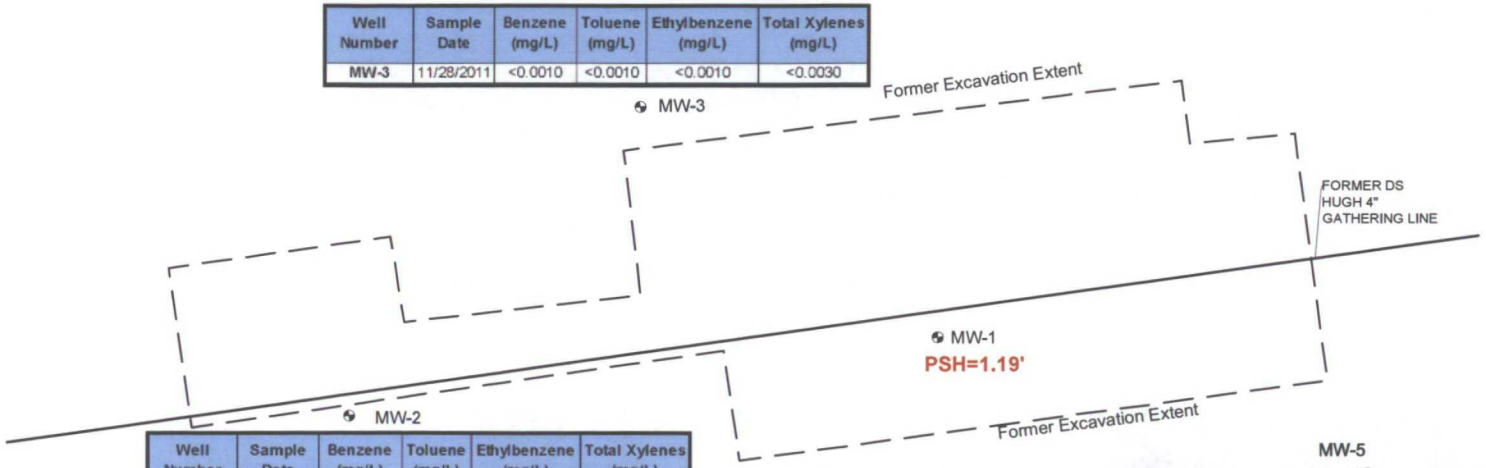

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-3	11/28/2011	<0.0010	<0.0010	<0.0010	<0.0030

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-2	11/28/2011	<0.0010	<0.0010	<0.0010	<0.0030

MW-5

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-5	11/28/2011	<0.0010	<0.0010	<0.0010	<0.0030

MW-4

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-4	11/28/2011	0.0091	<0.0010	0.1	0.18

MW-6

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-6	11/28/2011	<0.0010	<0.0010	<0.0010	<0.0030

MW-7

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-7	11/28/2011	<0.0010	<0.0010	<0.0010	<0.0030

LEGEND:

MW- - Monitor Well Location

— — — - Former Excavation Extent

PSH=0.01' - Phase Separated Hydrocarbon Thickness (feet)

Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
NMOCD Remediation Criteria			
0.01	0.75	0.75	0.62

Concentrations in **BOLD** exceed the NMOCD Remediation Criteria Standards for the Site.

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Environmental Challenges
BUSINESS SOLUTIONS

Figure 4D
4th Quarter 2011 - Groundwater Analytical Map
November 28, 2011
D.S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205071.00 | DATE: 12/11

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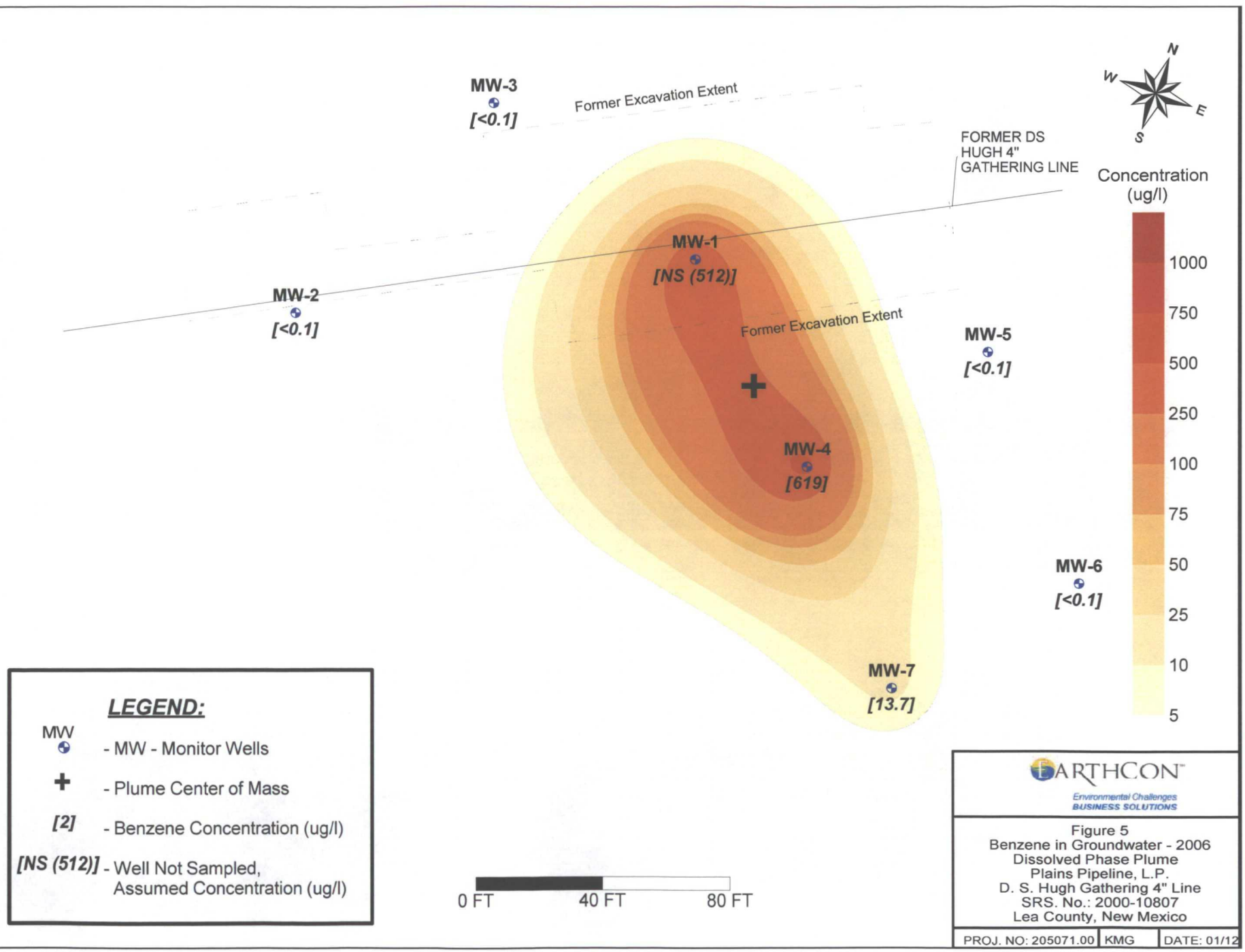

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Environmental Challenges
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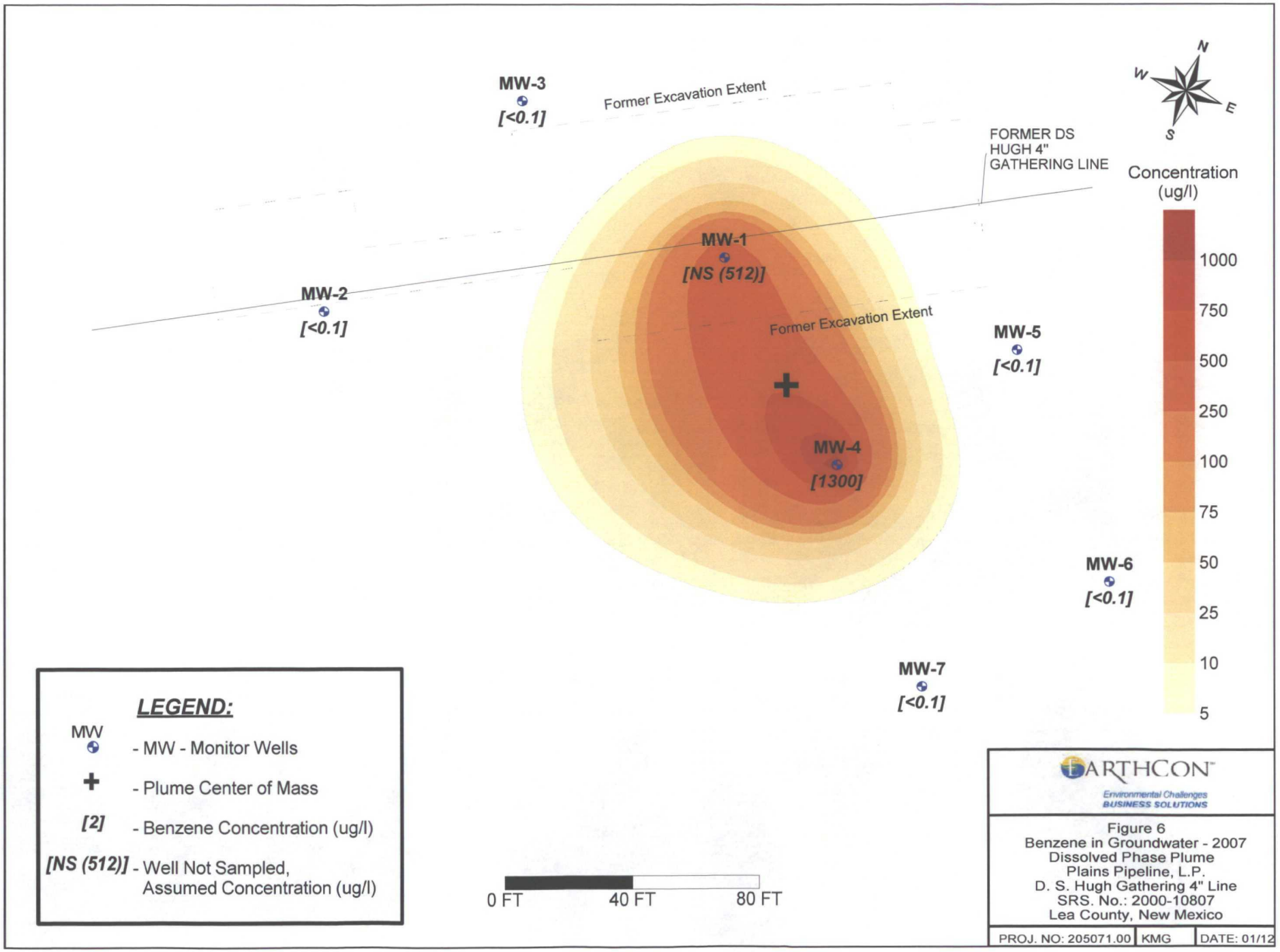
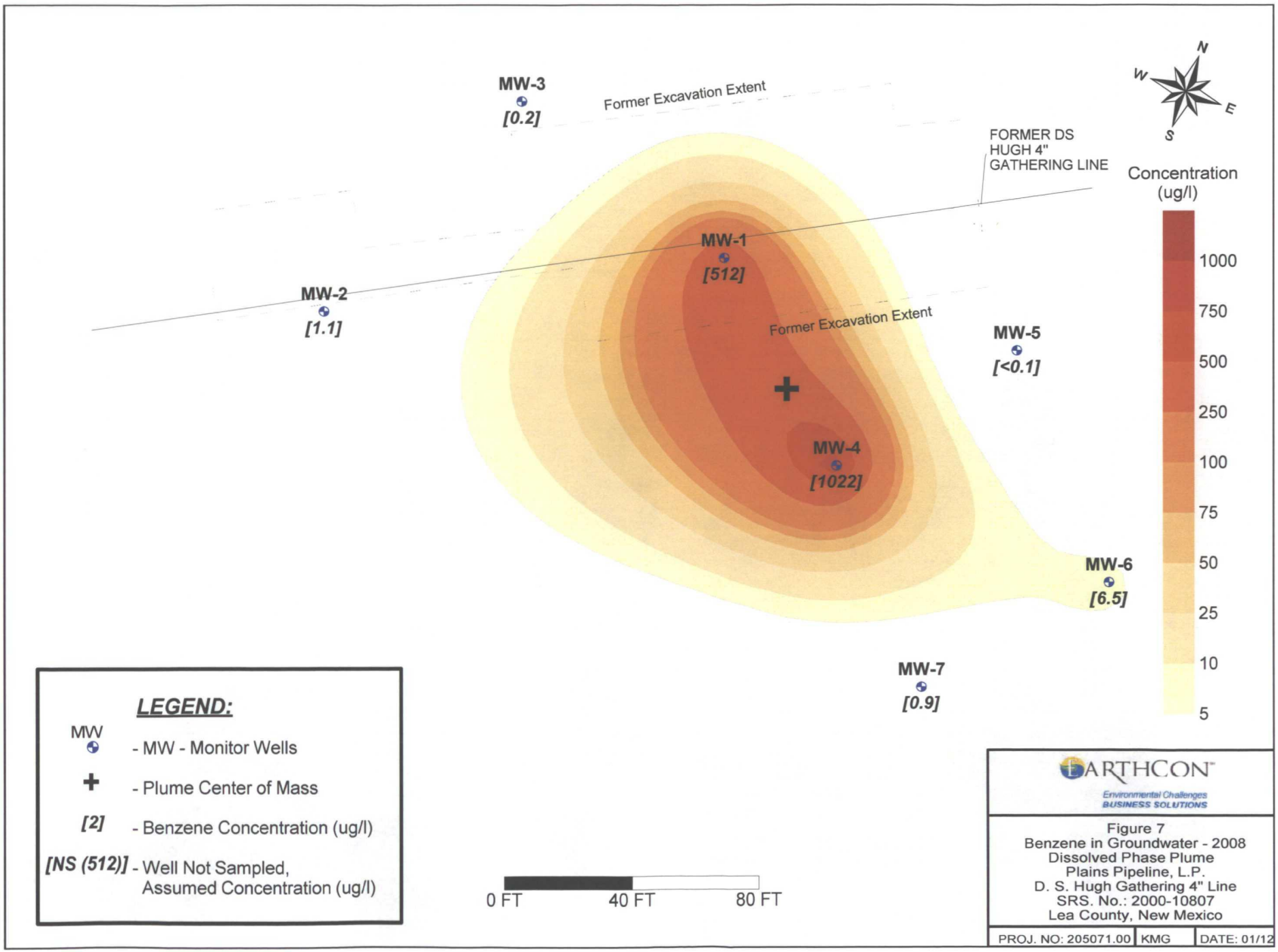
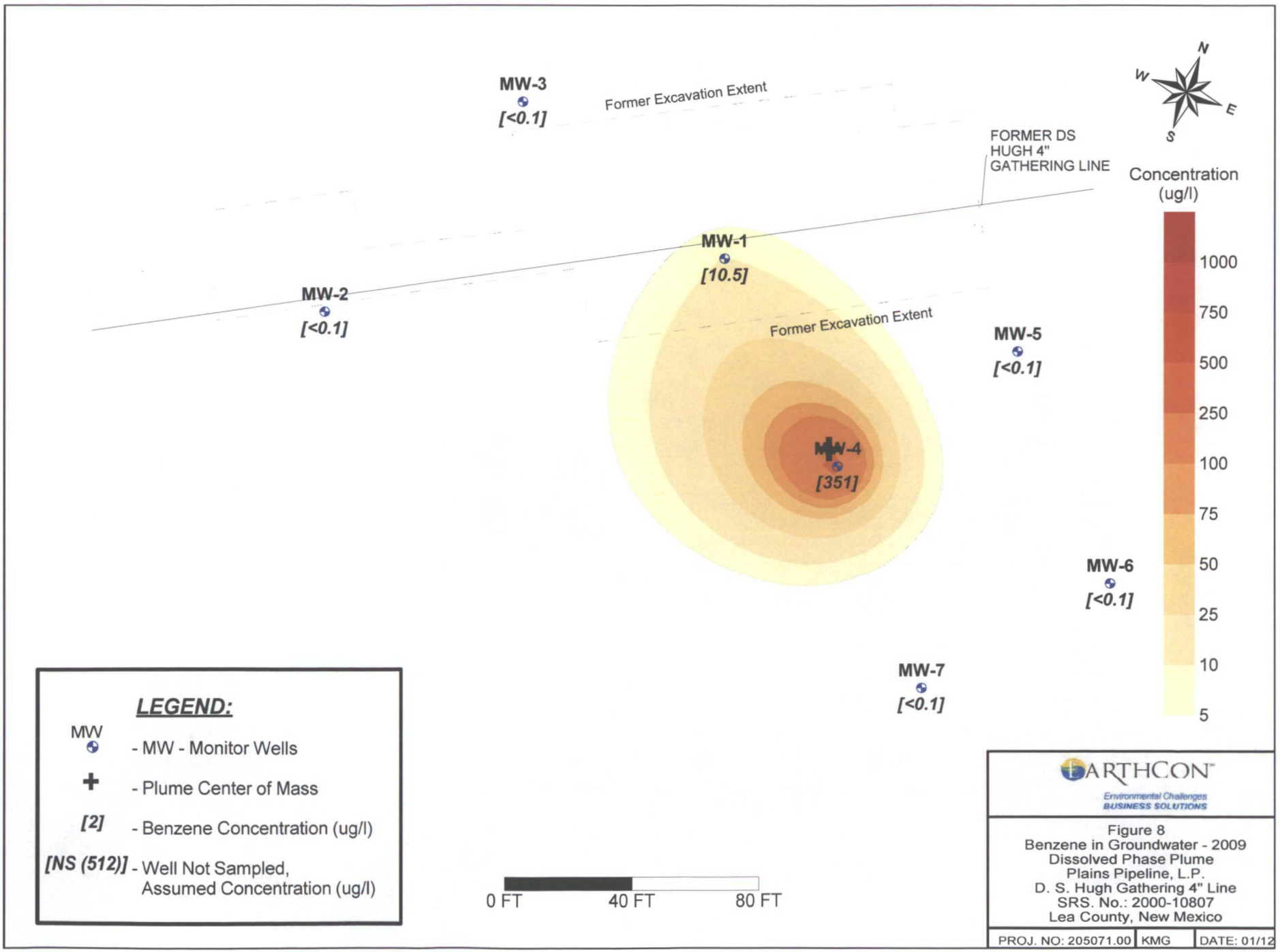
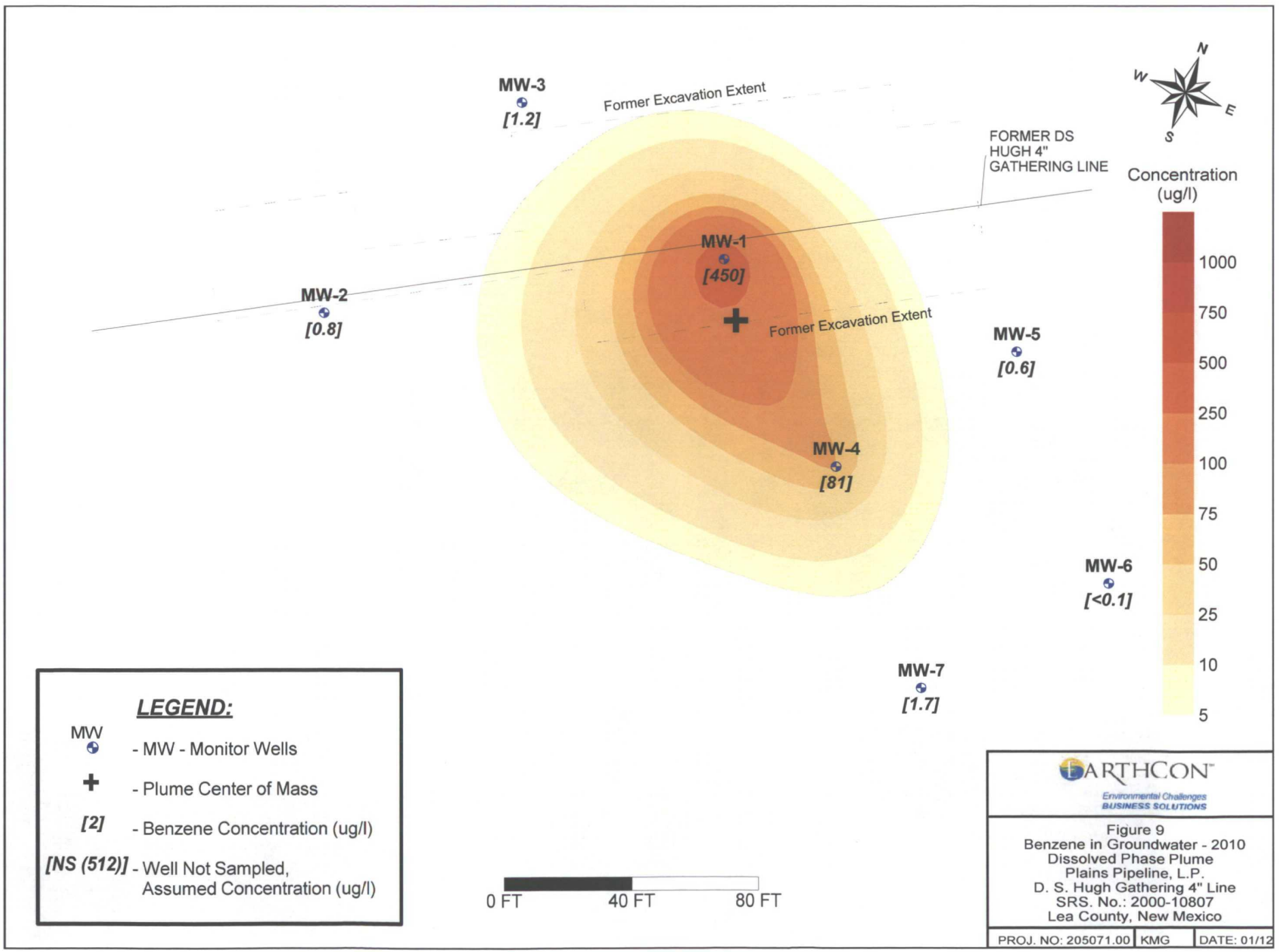
Figure 5
Benzene in Groundwater - 2006
Dissolved Phase Plume
Plains Pipeline, L.P.
D. S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Lea County, New Mexico

PROJ. NO: 205071.00	KMG	DATE: 01/12


MW-3
[<0.1]
Former Excavation Extent
FORMER DS
HUGH 4"
GATHERING LINE
N
W
E
S
Concentration
(ug/l)
1000
750
500
250
100
75
50
25
10
5
MW-1
[NS (512)]
MW-2
[<0.1]
Former Excavation Extent
MW-5
[<0.1]
MW-4
[1300]
MW-6
[<0.1]
MW-7
[<0.1]
LEGEND:
MW - MW - Monitor Wells
+ - Plume Center of Mass
[2] - Benzene Concentration (ug/l)
[NS (512)] - Well Not Sampled, Assumed Concentration (ug/l)
0 FT
40 FT
80 FT
EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS
Figure 6
Benzene in Groundwater - 2007
Dissolved Phase Plume
Plains Pipeline, L.P.
D. S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Lea County, New Mexico
PROJ. NO: 205071.00
KMG
DATE: 01/12


MW-3
[0.2]
Former Excavation Extent
FORMER DS
HUGH 4"
GATHERING LINE
N
W
E
S
Concentration
(ug/l)
1000
750
500
250
100
75
50
25
10
5
MW-1
[512]
MW-2
[1.1]
Former Excavation Extent
MW-5
[<0.1]
MW-4
[1022]
MW-6
[6.5]
MW-7
[0.9]
LEGEND:
MW - MW - Monitor Wells
+ - Plume Center of Mass
[2] - Benzene Concentration (ug/l)
[NS (512)] - Well Not Sampled, Assumed Concentration (ug/l)
0 FT
40 FT
80 FT
EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS
Figure 7
Benzene in Groundwater - 2008
Dissolved Phase Plume
Plains Pipeline, L.P.
D. S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Lea County, New Mexico
PROJ. NO: 205071.00
KMG
DATE: 01/12


MW-3
[<0.1]
Former Excavation Extent
FORMER DS
HUGH 4"
GATHERING LINE
N
W
E
S
Concentration
(ug/l)
1000
750
500
250
100
75
50
25
10
5
MW-1
[10.5]
MW-2
[<0.1]
Former Excavation Extent
MW-5
[<0.1]
MW-4
[351]
MW-6
[<0.1]
MW-7
[<0.1]
LEGEND:
MW - MW - Monitor Wells
+ - Plume Center of Mass
[2] - Benzene Concentration (ug/l)
[NS (512)] - Well Not Sampled, Assumed Concentration (ug/l)
0 FT
40 FT
80 FT
EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS
Figure 8
Benzene in Groundwater - 2009
Dissolved Phase Plume
Plains Pipeline, L.P.
D. S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Lea County, New Mexico
PROJ. NO: 205071.00
KMG
DATE: 01/12



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Environmental Challenges
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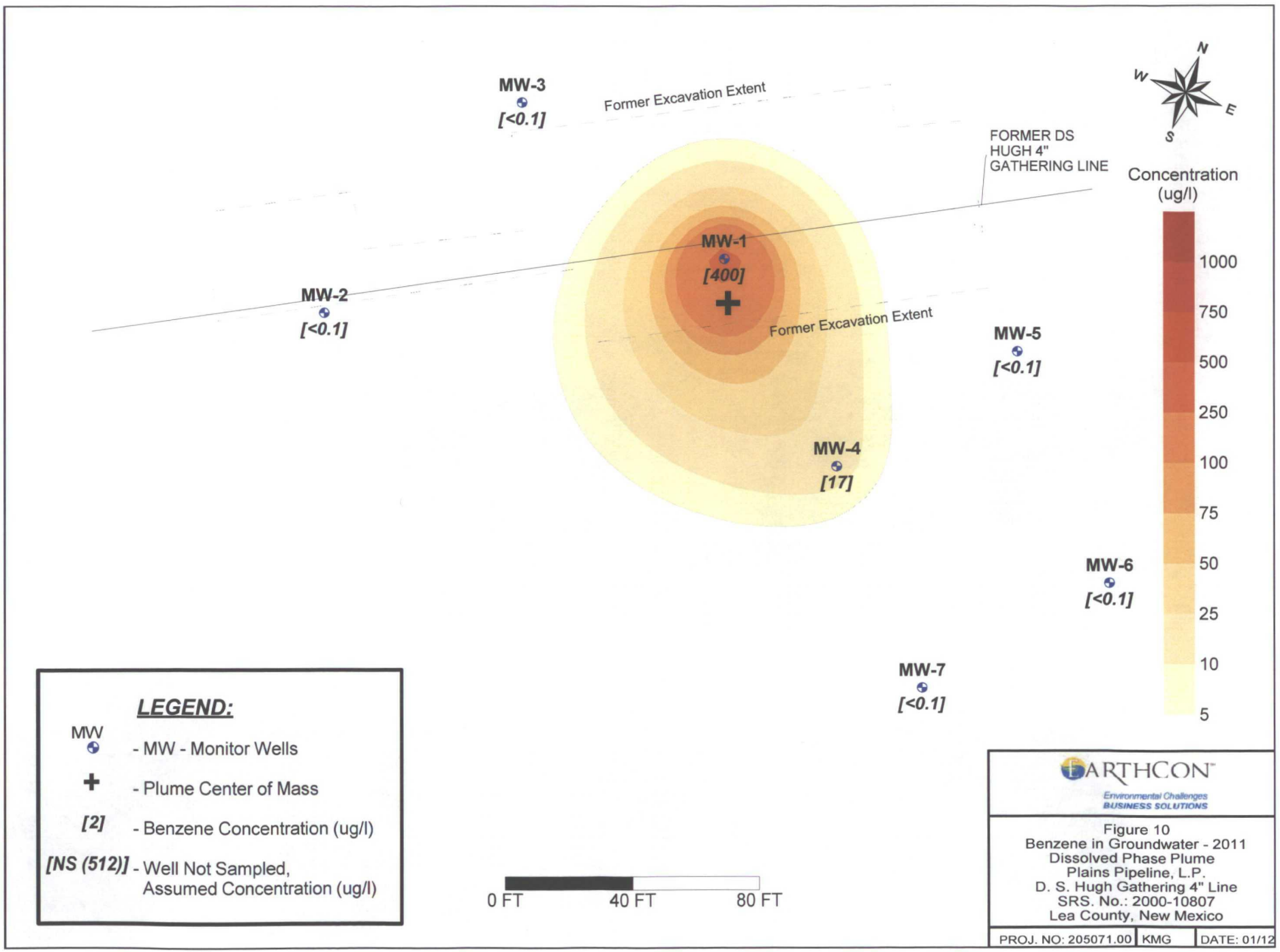
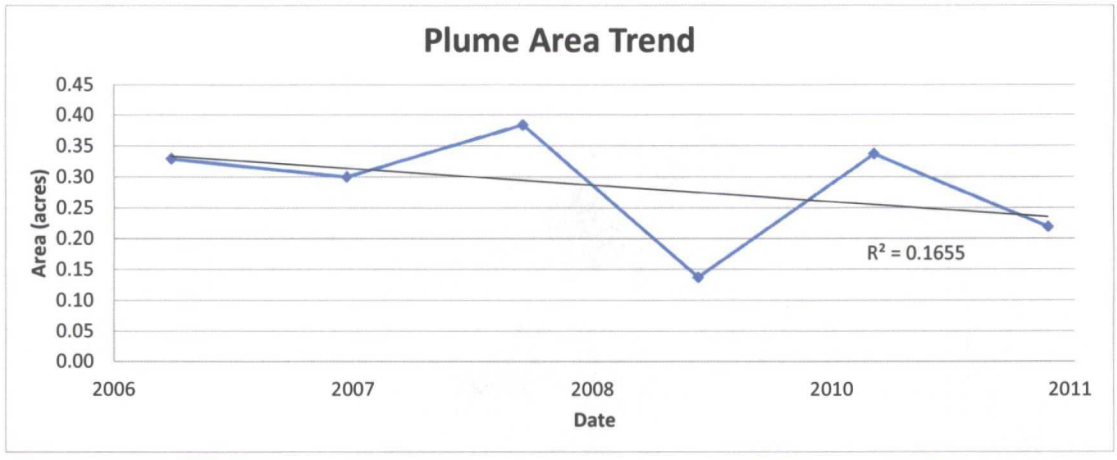
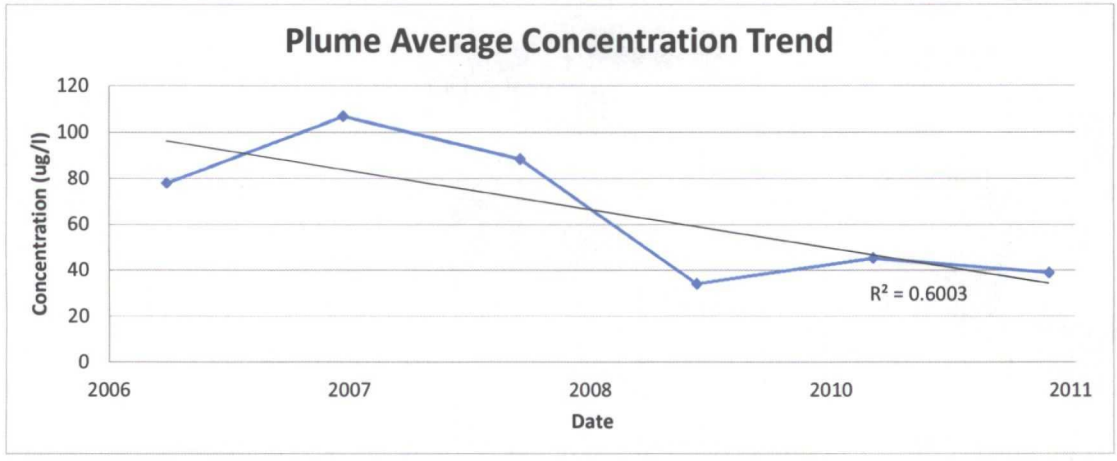
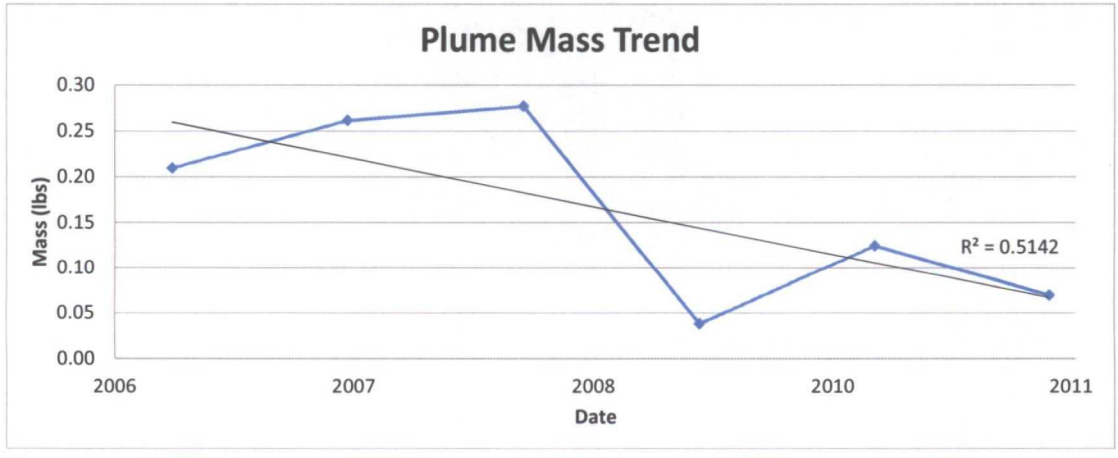
Figure 9
Benzene in Groundwater - 2010
Dissolved Phase Plume
Plains Pipeline, L.P.
D. S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Lea County, New Mexico

PROJ. NO: 205071.00	KMG	DATE: 01/12


MW-3
[<0.1]
Former Excavation Extent
FORMER DS
HUGH 4"
GATHERING LINE
MW-1
[400]
MW-2
[<0.1]
Former Excavation Extent
MW-5
[<0.1]
MW-4
[17]
MW-6
[<0.1]
MW-7
[<0.1]
N
W
E
S
Concentration
(ug/l)
1000
750
500
250
100
75
50
25
10
5
LEGEND:
MW - MW - Monitor Wells
+ - Plume Center of Mass
[2] - Benzene Concentration (ug/l)
[NS (512)] - Well Not Sampled, Assumed Concentration (ug/l)
0 FT
40 FT
80 FT
EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS
Figure 10
Benzene in Groundwater - 2011
Dissolved Phase Plume
Plains Pipeline, L.P.
D. S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Lea County, New Mexico
PROJ. NO: 205071.00
KMG
DATE: 01/12







Summary of Plume Stability Characteristics

Date	Area (Acres)	Average Conc. (µg/l)	Mass (lbs)
2006	0.33	78	0.21
2007	0.30	107	0.26
2008	0.38	88	0.28
2009	0.14	34	0.04
2010	0.34	45	0.12
2011	0.22	39	0.07

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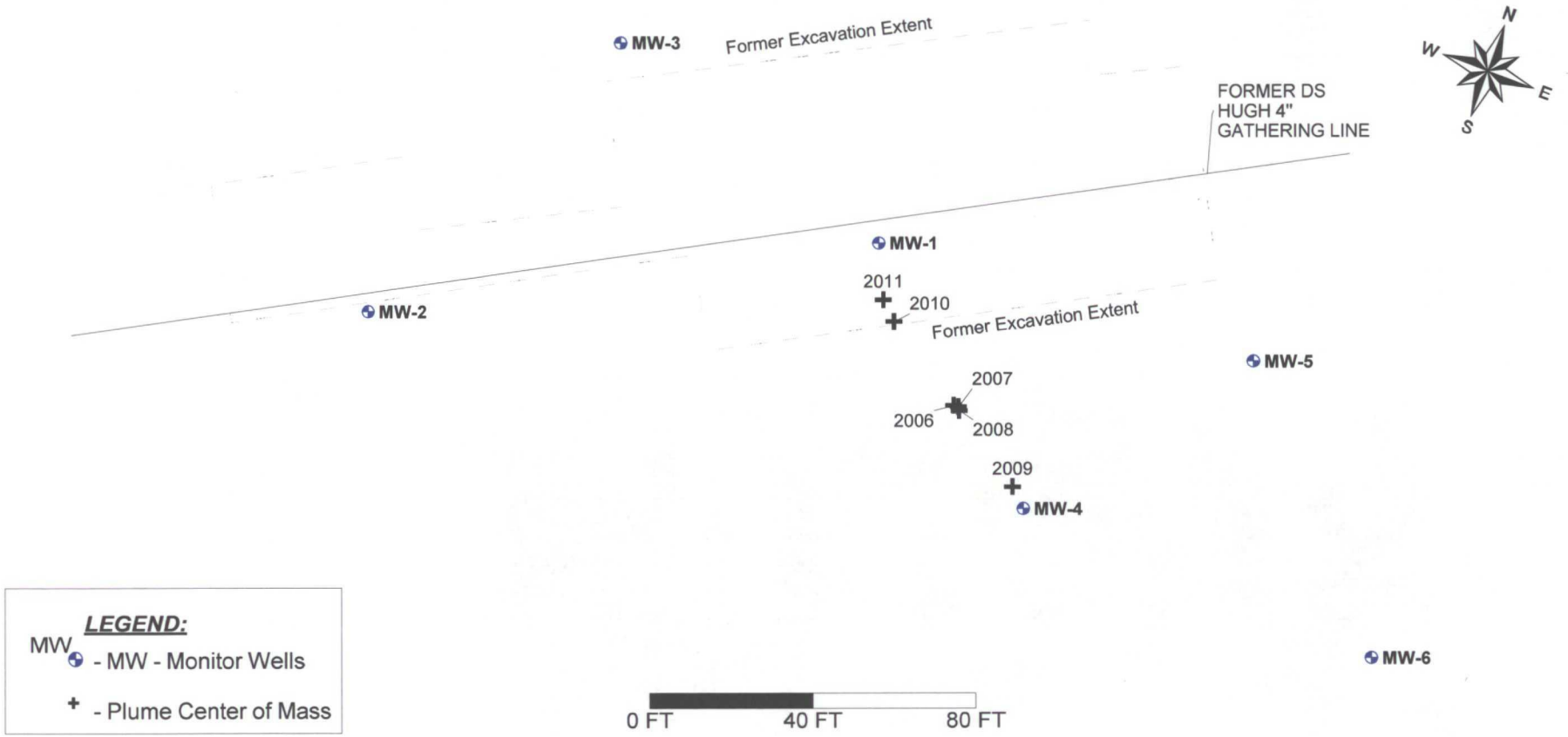
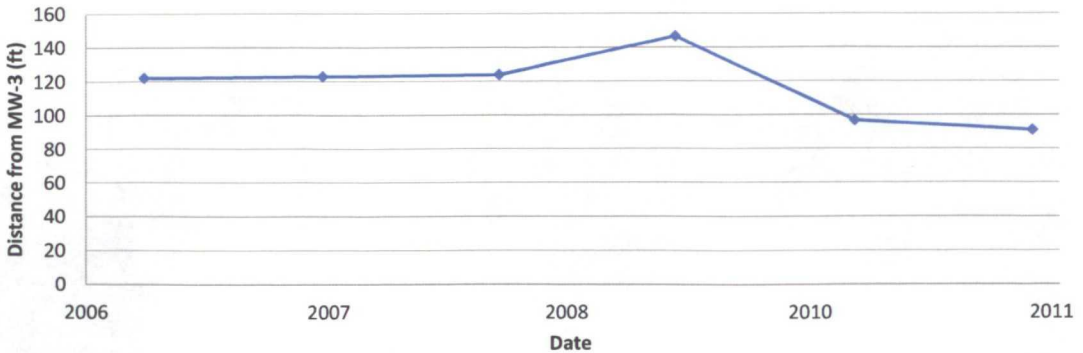
Figure 11
Benzene Plume Stability Analysis
Summary 2006-2011
Plains Pipeline, L.P.
D. S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Lea County, New Mexico

PROJ. NO: 205071.00	KMG	DATE: 1/12





EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS

Figure12
Benzene Plume Center of Mass
Summary 2006-2011
Plains Pipeline, L.P.
D. S. Hugh Gathering 4" Line
SRS. No.: 2000-10807
Lea County, New Mexico

PROJ. NO: 205071.00	CK: CBP	DATE: 03/11

TABLES

TABLE 1
2011 WELL SURVEY DATA AND GROUNDWATER ELEVATIONS
Plains Marketing, L.P.
SRS #2000-10807
D S Hugh Site
Lea County, New Mexico

Well Number	Date Measured	Top of Casing Elevation (ft)	Total Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	PSH Thickness (ft)	Recovery Method	Recovery		Corrected Groundwater Elevation (ft)
MW-1	02/24/11	3389.00	58.77	46.01	46.30	0.29		0.00	20.00	3342.95
MW-1	05/31/11	3389.00	58.77	46.46	46.61	0.15	NA	NA	NA	3342.52
MW-1	08/29/11	3389.00	58.77	47.05	47.97	0.92		0.10	9.90	3341.81
MW-1	11/28/11	3389.00	58.77	47.16	48.35	1.19	NA	NA	NA	3341.66
MW-2	02/24/11	3388.38	59.32	NA	45.73	NA	NA	NA	NA	3342.65
MW-2	05/31/11	3388.38	59.32	NA	46.18	NA	NA	NA	NA	3342.20
MW-2	08/29/11	3388.38	59.32	NA	46.76	NA	NA	NA	NA	3341.62
MW-2	11/28/11	3388.38	59.32	NA	46.93	NA	NA	NA	NA	3341.45
MW-3	02/24/11	3388.52	59.70	NA	46.11	NA	NA	NA	NA	3342.41
MW-3	05/31/11	3388.52	59.70	NA	46.57	NA	NA	NA	NA	3341.95
MW-3	08/29/11	3388.52	59.70	NA	47.18	NA	NA	NA	NA	3341.34
MW-3	11/28/11	3388.52	59.70	NA	47.32	NA	NA	NA	NA	3341.20
MW-4	02/24/11	3388.92	58.90	NA	46.84	NA	NA	NA	NA	3342.08
MW-4	05/31/11	3388.92	58.90	NA	47.27	NA	NA	NA	NA	3341.65
MW-4	08/29/11	3388.92	58.90	NA	47.83	NA	NA	NA	NA	3341.09
MW-4	11/28/11	3388.92	58.90	NA	47.98	NA	NA	NA	NA	3340.94
MW-5	02/24/11	3389.40	59.12	NA	47.26	NA	NA	NA	NA	3342.14
MW-5	05/31/11	3389.40	59.12	NA	47.21	NA	NA	NA	NA	3342.19
MW-5	08/29/11	3389.40	59.12	NA	48.28	NA	NA	NA	NA	3341.12
MW-5	11/28/11	3389.40	59.12	NA	48.43	NA	NA	NA	NA	3340.97
MW-6	02/24/11	3389.72	57.45	NA	47.88	NA	NA	NA	NA	3341.84
MW-6	05/31/11	3389.72	57.45	NA	48.35	NA	NA	NA	NA	3341.37
MW-6	08/29/11	3389.72	57.45	NA	48.85	NA	NA	NA	NA	3340.87

TABLE 1
2011 WELL SURVEY DATA AND GROUNDWATER ELEVATIONS
Plains Marketing, L.P.
SRS #2000-10807
D S Hugh Site
Lea County, New Mexico

Well Number	Date Measured	Top of Casing Elevation (ft)	Total Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	PSH Thickness (ft)	Recovery Method	Recovery		Corrected Groundwater Elevation (ft)
MW-6	11/28/11	3389.72	57.45	NA	49.00	NA	NA	NA	NA	3340.72
MW-7	02/24/11	3389.28	55.45	NA	47.41	NA	NA	NA	NA	3341.87
MW-7	05/31/11	3389.28	55.45	NA	47.83	NA	NA	NA	NA	3341.45
MW-7	08/29/11	3389.28	55.45	NA	48.36	NA	NA	NA	NA	3340.92
MW-7	11/28/11	3389.28	55.45	NA	48.53	NA	NA	NA	NA	3340.75

NA: Not Applicable

TABLE 2

Historical Monitor Well Survey Data and Groundwater Elevations

Available on CD attached to back cover

TABLE 3
2011 GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS #2000-10807
D S Hugh Site
Lea County, New Mexico

Well Number	Sample Date	Sample ID	SW 846-8021B			
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
			NMOCD Remediation Criteria			
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
MW-1	02/24/11	NS	NS	NS	NS	NS
MW-1	05/31/11	1106003-01	**0.4**	0.36	0.3	**0.74**
MW-1	08/29/11	NS	NS	NS	NS	NS
MW-1	11/28/11	NS	NS	NS	NS	NS
MW-2	02/24/11	1102759-01	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	05/31/11	1106003-02	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	08/29/11	1108973-01	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	11/28/11	1111900-01	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	02/24/11	1102759-02	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	05/31/11	1106003-03	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	08/29/11	1108973-02	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	11/28/11	1111900-02	<0.0010	<0.0010	<0.0010	<0.0030
MW-4	02/24/11	1102759-03	**0.020**	0.030	0.096	0.26
MW-4	05/31/11	1106003-04	**0.024**	0.022	0.079	0.28
MW-4	08/29/11	1108973-03	**0.014**	0.0035 P	0.11	0.28
MW-4	11/28/11	1111900-03	0.0091	<0.0010	0.10	0.18
MW-5	02/24/11	1102759-04	<0.0010	<0.0010	<0.0010	<0.0030
MW-5	05/31/11	1106003-05	<0.0010	<0.0010	<0.0010	<0.0030
MW-5	08/29/11	1108973-04	<0.0010	<0.0010	<0.0010	<0.0030 P
MW-5	11/28/11	1111900-04	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	02/24/11	1102759-05	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	05/31/11	1106003-06	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	08/29/11	1108973-05	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	11/28/11	1111900-05	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	02/24/11	1102759-06	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	05/31/11	1106003-07	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	08/29/11	1108973-06	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	11/28/11	1111900-06	<0.0010	<0.0010	<0.0010	<0.0030

Concentration in **Bold** = above NMOCD Remediation Criteria
Note: MW-1 only sampled during the second quarter due to presence of hydrocarbon sheen (NS)
P = Dual Column results percent difference > 40%

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS #2000-10807
D S Hugh Site
Lea County, New Mexico

Well Number	Sample Date	Sample ID	MTBE (mg/L)	SW 846-8021B			
				Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
				NMOCD Remediation Criteria			
				0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
MW-1	12/21/05	NS	NA	NS	NS	NS	NS
MW-1	03/28/06	NS	NA	NS	NS	NS	NS
MW-1	06/15/06	NS	NA	NS	NS	NS	NS
MW-1	09/12/06	NS	NA	NS	NS	NS	NS
MW-1	03/01/07	NS	NA	NS	NS	NS	NS
MW-1	05/22/08	T22302-1	NA	**0.512**	0.439	0.141	0.323
MW-1	05/19/09	9052214	<0.000750	**0.0105**	0.0143	0.0061	0.0178
MW-1	05/12/10	1005476-01	NA	**0.45**	0.68	0.3	**0.84**
MW-1	05/31/11	1106003-01	NA	**0.4**	0.36	0.3	**0.74**
MW-1	08/29/11	NS	NS	NS	NS	NS	NS
MW-1	11/28/11	NS	NS	NS	NS	NS	NS
MW-2	12/21/05	T12186-1	NA	<0.002	<0.002	<0.002	<0.006
MW-2	03/28/06	T13038-1	NA	<0.00038	<0.00036	<0.00035	<0.00072
MW-2	06/15/06	T13864-1	NA	<0.00038	<0.00036	<0.00035	<0.00072
MW-2	09/12/06	T14673-1	NA	<0.00035	<0.00020	<0.00033	<0.00036
MW-2	12/06/06	T15625-1	NA	<0.00035	<0.00020	<0.00033	<0.00036
MW-2	03/01/07	T16518-1	NA	<0.00035	<0.00020	<0.00033	<0.00036
MW-2	06/01/07	T17666-1	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW-2	09/07/07	T18804-1	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW-2	11/13/07	T19746-1	NA	<0.0005	<0.0005	<0.0005	<0.001
MW-2	02/27/08	T21042-1	NA	0.00077 J	<0.00023	0.00085 J	0.00068 J
MW-2	05/22/08	T22302-2	NA	0.00029 J	<0.00023	<0.00035	<0.0055
MW-2	08/20/08	T23537-1	NA	<0.0005	<0.0005	<0.0005	<0.001
MW-2	11/19/08	180051	NA	0.00230	<0.00100	0.00180	0.00130
MW-2	02/17/09	187738	NA	<0.001	<0.001	<0.001	<0.001
MW-2	05/19/09	9052214	<0.000160	<0.000133	<0.000281	<0.000535	<0.000960
MW-2	08/26/09	208335	NA	<0.000133	<0.000281	<0.000535	<0.000960
MW-2	11/17/09	215429	<0.000750	<0.000160	<0.000332	<0.000230	<0.000143
MW-2	02/09/10	222048	NA	<0.000208	<0.000208	<0.000303	<0.000326
MW-2	05/12/10	1005476-02	NA	0.00077 J	<0.00020	0.00039 J	<0.00070
MW-2	08/26/10	1008908-01	NA	<0.00020	<0.00020	<0.00020	<0.00070
MW-2	11/18/10	1011751-01	NA	<0.00020	<0.00020	<0.00020	<0.00070
MW-2	02/24/11	1102759-01	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	05/31/11	1106003-02	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	08/29/11	1108973-01	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	11/28/11	1111900-01	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	12/21/05	T12186-2	NA	<0.002	<0.002	<0.002	<0.006
MW-3	03/28/06	T13038-2	NA	<0.00038	<0.00036	<0.00035	<0.00072
MW-3	06/15/06	T13864-2	NA	<0.00038	<0.00036	<0.00035	<0.00072
MW-3	09/12/06	T14673-2	NA	<0.00035	<0.00020	<0.00033	<0.00036

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS #2000-10807
D S Hugh Site
Lea County, New Mexico

Well Number	Sample Date	Sample ID	MTBE (mg/L)	SW 846-8021B			
				Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
				NMOCD Remediation Criteria			
				0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
MW-3	12/06/06	T15625-2	NA	<0.00035	<0.00020	<0.00033	<0.00036
MW-3	03/01/07	T16518-2	NA	<0.00035	<0.00020	<0.00033	<0.00036
MW-3	06/01/07	T17666-2	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW-3	09/07/07	T18804-2	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW-3	11/13/07	T19746-2	NA	<0.0005	<0.0005	<0.0005	<0.001
MW-3	02/27/08	T21042-2	NA	0.00021 J	<0.00023	<0.00035	<0.00055
MW-3	05/22/08	T22302-3	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW-3	08/20/08	T23537-2	NA	<0.0005	<0.0005	<0.0005	<0.001
MW-3	11/19/08	180052	NA	<0.00100	<0.00100	<0.00100	<0.00100
MW-3	02/17/09	187739	NA	<0.001	<0.001	<0.001	<0.001
MW-3	05/19/09	9052214	<0.000469	<0.000149	<0.000188	<0.000178	<0.000163
MW-3	08/26/09	208336	NA	<0.000133	<0.000281	<0.000535	<0.000960
MW-3	11/17/09	215430	<0.000750	<0.000160	<0.000332	<0.000230	<0.000143
MW-3	02/09/10	222049	NA	<0.000208	<0.000208	<0.000303	<0.000326
MW-3	05/12/10	1005476-03	NA	0.0012	<0.00020	0.00049 J	0.00088 J
MW-3	08/26/10	1008908-02	NA	<0.00020	<0.00020	<0.00020	<0.00070
MW-3	11/18/10	1011751-02	NA	<0.00020	<0.00020	<0.00020	<0.00070
MW-3	02/24/11	1102759-02	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	05/31/11	1106003-03	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	08/29/11	1108973-02	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	11/28/11	1111900-02	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-4	03/28/06	T13038-3	NA	**0.2**[a]	0.0535	0.0384	0.115
MW-4	06/15/06	T13864-3	NA	**0.41**[a]	0.0926	0.144[a]	0.403[a]
MW-4	09/12/06	T14673-3	NA	**0.617**[a]	0.025	0.232[a]	0.208
MW-4	12/06/06	T15625-3	NA	**1.25**[a]	0.196	0.581[a]	0.818
MW-4	03/01/07	T16518-3	NA	**1.06**	0.186	0.294	0.195
MW-4	06/01/07	T17666-3	NA	**1.25**	0.0195 J	0.349	0.192
MW-4	09/07/07	T18804-3	NA	**1.51**	0.0554	0.317	0.295
MW-4	11/13/07	T19746-3	NA	**1.38**[a]	0.0251	0.256	0.22
MW-4	02/27/08	T21042-3	NA	**1.77**	0.0882	0.532	0.792
MW-4	05/22/08	T22302-4	NA	**1.09**	0.0215	0.291	0.254
MW-4	08/20/08	T23537-3	NA	**0.662**[a]	0.0161	0.207[a]	0.249
MW-4	11/19/08	180053	NA	**0.567**	0.0398	0.205	0.326
MW-4	02/17/09	187740	NA	**0.654**	0.0451	0.196	0.507
MW-4	05/19/09	9052214	<0.00938	**0.338**	0.0259	0.174	0.319
MW-4	08/26/09	208337	NA	**0.301**	0.0405	0.180	0.407
MW-4	11/17/09	215431	<0.000750	**0.112**	0.0350	0.115	0.246
MW-4	02/09/10	222050	NA	**0.16**	0.0663	0.159	0.398
MW-4	05/12/10	1005476-04	NA	**0.11**	0.0450	0.14	0.4
MW-4	08/26/10	1008908-03	NA	**0.038**	0.0340	0.094	0.26
MW-4	11/18/10	1011751-03	NA	**0.014**	0.0023	0.12	0.26

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS #2000-10807
D S Hugh Site
Lea County, New Mexico

Well Number	Sample Date	Sample ID	MTBE (mg/L)	SW 846-8021B			
				Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
				NMOCD Remediation Criteria			
				0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
MW-4	02/24/11	1102759-03	NA	**0.020**	0.030	0.096	0.26
MW-4	05/31/11	1106003-04	NA	**0.024**	0.022	0.079	0.28
MW-4	08/29/11	1108973-03	NA	**0.014**	0.0035 P	0.11	0.28
MW-4	11/28/11	1111900-03	NA	0.0091	<0.0010	0.10	0.18
MW-5	03/28/06	T13038-4	NA	<0.00038	<0.00036	<0.00035	<0.00072
MW-5	06/15/06	T13864-4	NA	<0.00038	<0.00036	<0.00035	<0.00072
MW-5	09/12/06	T14673-4	NA	<0.00035	<0.00020	<0.00033	<0.00036
MW-5	12/06/06	T15625-4	NA	<0.00035	<0.00020	<0.00033	<0.00036
MW-5	03/01/07	T16518-4	NA	<0.00035	<0.00020	<0.00033	<0.00036
MW-5	06/01/07	T17666-4	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW-5	09/07/07	T18804-4	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW-5	11/13/07	T19746-4	NA	<0.0005	<0.0005	<0.0005	<0.001
MW-5	02/27/08	T21042-4	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW-5	05/22/08	T22302-5	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW-5	08/20/08	T23537-4	NA	<0.0005	<0.0005	<0.0005	<0.001
MW-5	11/19/08	180054	NA	<0.00100	<0.00100	<0.00100	<0.00100
MW-5	02/17/09	187741	NA	<0.00100	<0.00100	<0.00100	<0.00100
MW-5	05/19/09	9052214	<0.000469	<0.000149	<0.000188	<0.000178	<0.000163
MW-5	08/26/09	208338	NA	<0.000133	<0.000281	<0.000535	<0.000960
MW-5	11/17/09	215432	<0.000160	<0.000133	<0.000281	<0.000535	<0.000960
MW-5	02/09/10	222051	NA	<0.000208	<0.000208	<0.000303	<0.000326
MW-5	05/12/10	1005476-05	NA	0.00058 J	<0.00020	0.00042 J	0.001 J
MW-5	08/26/10	1008908-04	NA	<0.00020	<0.00020	<0.00020	<0.00070
MW-5	11/18/10	1011751-04	NA	<0.00020	<0.00020	<0.00020	<0.00070
MW-5	02/24/11	1102759-04	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-5	05/31/11	1106003-05	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-5	08/29/11	1108973-04	NA	<0.0010	<0.0010	<0.0010	<0.0030 P
MW-5	11/28/11	1111900-04	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	06/15/06	T13864-5	NA	<0.00038	<0.00036	<0.00035	<0.00072
MW-6	09/12/06	T14673-5	NA	<0.00035	<0.00020	<0.00033	<0.00036
MW-6	12/06/06	T15625-5	NA	<0.00035	<0.00020	<0.00033	<0.00036
MW-6	03/01/07	T16518-5	NA	<0.00035	<0.00020	<0.00033	<0.00036
MW-6	06/01/07	T17666-5	NA	<0.00021	<0.00023	<0.00035	0.0014 J
MW-6	09/07/07	T18804-5	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW-6	11/13/07	T19746-5	NA	<0.0005	<0.0005	<0.0005	<0.001
MW-6	02/27/08	T21042-5	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW-6	05/22/08	T22302-6	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW-6	08/20/08	T23537-5	NA	0.0065	<0.0005	0.0037	<0.001
MW-6	11/19/08	180055	NA	<0.00100	<0.00100	<0.00100	<0.00100
MW-6	02/17/09	187742	NA	<0.00100	<0.00100	<0.00100	<0.00100

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS #2000-10807
D S Hugh Site
Lea County, New Mexico

Well Number	Sample Date	Sample ID	MTBE (mg/L)	SW 846-8021B			
				Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
				NMOCD Remediation Criteria			
				0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
MW-6	05/19/09	9052214	<0.000469	<0.000149	<0.000188	<0.000178	<0.000163
MW-6	08/26/09	208339	NA	<0.000133	<0.000281	<0.000535	<0.000960
MW-6	11/17/09	215433	<0.000160	<0.000133	<0.000281	<0.000535	<0.000960
MW-6	02/09/10	222052	NA	<0.000208	<0.000208	0.0006 J	0.0007 J
MW-6	05/12/10	1005476-06	NA	<0.00020	<0.00020	<0.00020	<0.00070
MW-6	08/26/10	1008908-05	NA	<0.00020	<0.00020	<0.00020	<0.00070
MW-6	11/18/10	1011751-05	NA	<0.00020	<0.00020	<0.00020	<0.00070
MW-6	02/24/11	1102759-05	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	05/31/11	1106003-06	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	08/29/11	1108973-05	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	11/28/11	1111900-05	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	06/15/06	T13864-6	NA	<0.00038	<0.00036	<0.00035	<0.00072
MW-7	09/12/06	T14673-6	NA	**0.0163**	<0.00020	<0.00033	0.0036
MW-7	12/06/06	T15625-6	NA	**0.011**	<0.00020	<0.00033	0.004
MW-7	03/01/07	T16518-6	NA	<0.00035	<0.00020	<0.00033	0.0053
MW-7	06/01/07	T17666-6	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW-7	09/07/07	T18804-6	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW-7	11/13/07	T19746-6	NA	<0.0005	<0.0005	<0.0005	<0.001
MW-7	02/27/08	T21042-6	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW-7	05/22/08	T22302-7	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW-7	08/20/08	T23537-6	NA	0.00086 J	<0.0005	0.00054 J	<0.001
MW-7*	11/19/08	180056	NA	NS	NS	NS	NS
MW-7	02/17/09	187743	NA	<0.00100	<0.00100	<0.00100	<0.00100
MW-7	05/19/09	9052214	<0.000469	<0.000149	<0.000188	<0.000178	<0.000163
MW-7	08/26/09	208340	NA	<0.000133	<0.000281	<0.000535	<0.000960
MW-7	11/17/09	215434	<0.000160	<0.000133	<0.000281	<0.000535	<0.000960
MW-7	02/09/10	222053	NA	<0.000208	<0.000208	0.0012	0.0014
MW-7	05/12/10	1005476-07	NA	0.0017	<0.00020	0.00079 J	0.0019 J
MW-7	08/26/10	1008908-06	NA	<0.00020	<0.00020	<0.00020	<0.00070
MW-7	11/18/10	1011751-06	NA	<0.00020	<0.00020	<0.00020	<0.00070
MW-7	02/24/11	1102759-06	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	05/31/11	1106003-07	NA	<0.0010	<0.0010	<0.0010	<0.0030

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS #2000-10807
D S Hugh Site
Lea County, New Mexico

Well Number	Sample Date	Sample ID	MTBE (mg/L)	SW 846-8021B			
				Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
				NMOCD Remediation Criteria			
				0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
MW-7	08/29/11	1108973-06	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	11/28/11	1111900-06	NA	<0.0010	<0.0010	<0.0010	<0.0030

(a) = Result is from Run #2
Concentration in **Bold =** above NMOCD Remediation Criteria
Note: MW-1 not sampled due to presence of hydrocarbon sheen (NS)
J = Analyte detected below quantitation limit (Detected below MDL but above SDL.)
MDL = Method detection limit
SDL = Sample detection limit
* MW-7 was not sampled in 4th Quarter 2008, due to root growth in the well
NA = Not requested for analysis
P = Dual Column results percent difference > 40%

TABLE 5
GROUNDWATER ANALYTICAL RESULTS FOR
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHs) FROM WELLS WITH SHEEN/PSH
Plains Marketing, L.P.
SRS #2000-10807
D S Hugh Site
Lea County, New Mexico

Monitoring Well	Sample Date	Lab Report #	Naphthalene	Acenaphthylene	Acenaphthene	Flourene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo[a]-anthracene	Chrysene	Benzo[b]-fluoranthene	Benzo[a]-pyrene	Dibenzofuran	Dibenz[a,h]-anthracene	Benzo[g,h,i]-perylene	Benzo(k)fluoranthene	1-Methylnaphthalene	2-Methylnaphthalene	Total Methylnaphthalene	TPH-GRO (C6-C10)	TPH DRO (C10-C28)	TPH DRO (C28-C35)
Units			(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
Other regulatory limits (Tap Water)*			***	NA	365	243	0.91	1100	1830	1460	183	0.91	29.1	0.91	0.7***		0.091	NA	9.1			***	NA	NA	NA
MW-1	5/22/2008	T22302-1	10.7	<1.6	<1.5	<2.1	<2.4	<1.6	<1.8	<1.6	<1.1	<1.4	<1.3	<1.5	<1.6	NA	<1.3	<2.5	<1.6	NA	10.2	10.2	5.56	2.2	
MW-1	5/19/2009	9052214	6.67	<0.0707	<0.131	<0.0525	<0.0801	1.53	<0.0808	<0.0880	<0.0458	<0.0302	<0.0913	<0.0631	<0.0506	0.897	<0.0558	<0.0628	<0.0765	9.04	9.05	18.1	0.183 J	<0.876	
MW-1	5/12/2010	1005476-01	**47**	<0.070	3.7	2.2	<0.10	6.7	<0.070	<0.070	<0.070	<0.070	0.78	<0.090	<0.080	3.2	<0.080	<0.090	<0.10	61	76	**137**	40	82	12
MW-1	12/7/2011	1112249-01	**0.028**	0.0007	0.0051	0.00059	<0.002	0.010	0.00035	<0.002	<0.002	<0.002	0.0012	<0.002	<0.002	NA	<0.002	<0.002	<0.002	NA	NA	NA	NA	NA	NA
MW-4	12/7/2011	1112249-02	**0.0036**	<0.002	<0.002	<0.002	<0.002	0.00022	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	NA	<0.002	<0.002	<0.002	NA	NA	NA	NA	NA	NA

< = Not Detected
Tap Water* = NMED Tap Water Soil screening levels for residential scenarios.
*** = NM Water Quality Standard for PAHs is 30µg/L for total naphthalenes plus monomethylnaphthalenes (total methylnaphthalenes)
** = NM Water Quality Standard
J = Analyte detected below quantitation limit (Detected below MDL but above SDL.)
NA = Not requested for analysis
Concentrations in **Bold** exceed applicable New Mexico regulatory standards

TABLE 6
2011 MONTHLY PSH AND DISSOLVED PHASE GROUNDWATER RECOVERY
Plains Marketing, L.P.
SRS #2000-10807
D S Hugh Site
Lea County, New Mexico

Month	Volume of dissolved phase groundwater recovered in gallons	Quarterly Volume of dissolved phase groundwater recovered in gallons
January	0.40	159.60
February	0.40	114.6
March	0.50	124.5
April	0.40	64.60
May	0.40	119.60
June	6.50	99.75
July	0.40	49.60
August	0.60	49.40
September	0.90	34.10
October	4.25	125.75
November	2.60	57.90
December	2.10	87.90
Total	**19.45**	**1087.30**

APPENDIX A

2011 Analytical Laboratory Reports

1st Quarter 2011 Analytical Reports – 1102759

2nd Quarter 2011 Analytical Reports – 1106003

3rd Quarter 2011 Analytical Reports – 1108973

4th Quarter 2011 Analytical Reports – 1111900

Chain of Custody Documentation

ALS Environmental

04-Mar-2011

Chan Patel
Premier Environmental Services
4800 Sugar Grove Blvd.
Suite 390
Houston, TX 77477

Tel: (281) 240-5200
Fax: (770) 973-7395

Re: DS Hugh

Work Order: **1102759**

Dear Chan,

ALS Environmental received 7 samples on 25-Feb-2011 10:15 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 14.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

JayLynn F Thibault

Electronically approved by: Glenda H. Ramos

JayLynn F Thibault
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac
Certificate No: TX: T104704231-10-3

ALS Environmental

Date: 04-Mar-11

Client: Premier Environmental Services
Project: DS Hugh
Work Order: **1102759**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1102759-01	MW-2	Water		2/24/2011 14:15	2/25/2011 10:15	☐
1102759-02	MW-3	Water		2/24/2011 14:20	2/25/2011 10:15	☐
1102759-03	MW-4	Water		2/24/2011 14:40	2/25/2011 10:15	☐
1102759-04	MW-5	Water		2/24/2011 14:25	2/25/2011 10:15	☐
1102759-05	MW-6	Water		2/24/2011 14:30	2/25/2011 10:15	☐
1102759-06	MW-7	Water		2/24/2011 14:35	2/25/2011 10:15	☐
1102759-07	Trip Blank	Water		2/24/2011	2/25/2011 10:15	☑

ALS Environmental

Date: *04-Mar-11*

Client: Premier Environmental Services
Project: DS Hugh
Work Order: 1102759
Sample ID: MW-2
Lab ID: 1102759-01
Collection Date: 2/24/2011 02:15 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	3/2/2011 05:00 AM
Toluene	ND		0.0010	mg/L	1	3/2/2011 05:00 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/2/2011 05:00 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/2/2011 05:00 AM
Surr: 4-Bromofluorobenzene	*103*		*77-129*	*%REC*	1	3/2/2011 05:00 AM
Surr: Trifluorotoluene	*102*		*75-130*	*%REC*	1	3/2/2011 05:00 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Mar-11*

Client: Premier Environmental Services
Project: DS Hugh
Work Order: 1102759
Sample ID: MW-3
Lab ID: 1102759-02
Collection Date: 2/24/2011 02:20 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	3/2/2011 05:18 AM
Toluene	ND		0.0010	mg/L	1	3/2/2011 05:18 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/2/2011 05:18 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/2/2011 05:18 AM
Surr: 4-Bromofluorobenzene	*103*		*77-129*	*%REC*	1	3/2/2011 05:18 AM
Surr: Trifluorotoluene	*102*		*75-130*	*%REC*	1	3/2/2011 05:18 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Mar-11*

Client: Premier Environmental Services
Project: DS Hugh
Work Order: 1102759
Sample ID: MW-4
Lab ID: 1102759-03
Collection Date: 2/24/2011 02:40 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.020**		**0.0010**	**mg/L**	1	3/2/2011 02:41 AM
Toluene	**0.030**		**0.0010**	**mg/L**	1	3/2/2011 02:41 AM
Ethylbenzene	**0.096**		**0.0010**	**mg/L**	1	3/2/2011 02:41 AM
Xylenes, Total	**0.26**		**0.0030**	**mg/L**	1	3/2/2011 02:41 AM
Surr: 4-Bromofluorobenzene	*116*		*77-129*	*%REC*	1	3/2/2011 02:41 AM
Surr: Trifluorotoluene	*126*		*75-130*	*%REC*	1	3/2/2011 02:41 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Mar-11*

Client: Premier Environmental Services
Project: DS Hugh
Work Order: 1102759
Sample ID: MW-5
Lab ID: 1102759-04
Collection Date: 2/24/2011 02:25 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	3/2/2011 05:35 AM
Toluene	ND		0.0010	mg/L	1	3/2/2011 05:35 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/2/2011 05:35 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/2/2011 05:35 AM
Surr: 4-Bromofluorobenzene	*102*		*77-129*	*%REC*	1	3/2/2011 05:35 AM
Surr: Trifluorotoluene	*101*		*75-130*	*%REC*	1	3/2/2011 05:35 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Mar-11*

Client: Premier Environmental Services
Project: DS Hugh
Work Order: 1102759
Sample ID: MW-6
Lab ID: 1102759-05
Collection Date: 2/24/2011 02:30 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	3/2/2011 05:52 AM
Toluene	ND		0.0010	mg/L	1	3/2/2011 05:52 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/2/2011 05:52 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/2/2011 05:52 AM
Surr: 4-Bromofluorobenzene	*102*		*77-129*	*%REC*	1	3/2/2011 05:52 AM
Surr: Trifluorotoluene	*101*		*75-130*	*%REC*	1	3/2/2011 05:52 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Mar-11*

Client: Premier Environmental Services
Project: DS Hugh
Work Order: 1102759
Sample ID: MW-7
Lab ID: 1102759-06
Collection Date: 2/24/2011 02:35 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	3/2/2011 06:09 AM
Toluene	ND		0.0010	mg/L	1	3/2/2011 06:09 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/2/2011 06:09 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/2/2011 06:09 AM
Surr: 4-Bromofluorobenzene	*104*		*77-129*	*%REC*	1	3/2/2011 06:09 AM
Surr: Trifluorotoluene	*101*		*75-130*	*%REC*	1	3/2/2011 06:09 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 04-Mar-11

Client: Premier Environmental Services

Work Order: 1102759

Project: DS Hugh

QC BATCH REPORT

Batch ID: **R106106** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **BBLKW2-030111-R106106** Units: **µg/L** Analysis Date: **3/2/2011 12:55 AM**

Client ID: Run ID: **BTEX1_110301C** SeqNo: **2295906** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 4-Bromofluorobenzene	*31.26*	1.0	*30*	0	*104*	*77-129*	0			
Surr: Trifluorotoluene	*30.59*	1.0	*30*	0	*102*	*75-130*	0			

LCS Sample ID: **BLCSW2-030111-R106106** Units: **µg/L** Analysis Date: **3/2/2011 12:21 AM**

Client ID: Run ID: **BTEX1_110301C** SeqNo: **2295905** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.05	1.0	20	0	105	77-126	0			
Toluene	21.35	1.0	20	0	107	80-124	0			
Ethylbenzene	21.82	1.0	20	0	109	76-125	0			
Xylenes, Total	63.22	3.0	60	0	105	79-124	0			
Surr: 4-Bromofluorobenzene	*32.94*	1.0	*30*	0	*110*	*77-129*	0			
Surr: Trifluorotoluene	*31.31*	1.0	*30*	0	*104*	*75-130*	0			

MS Sample ID: **1102728-02AMS** Units: **µg/L** Analysis Date: **3/2/2011 01:49 AM**

Client ID: Run ID: **BTEX1_110301C** SeqNo: **2295909** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	23.81	1.0	20	0	119	77-126	0			
Toluene	23.92	1.0	20	0	120	80-124	0			
Ethylbenzene	24.25	1.0	20	0	121	76-125	0			
Xylenes, Total	56.82	3.0	60	0	94.7	79-124	0			
Surr: 4-Bromofluorobenzene	*33.01*	1.0	*30*	0	*110*	*77-129*	0			
Surr: Trifluorotoluene	*31.23*	1.0	*30*	0	*104*	*75-130*	0			

MSD Sample ID: **1102728-02AMSD** Units: **µg/L** Analysis Date: **3/2/2011 02:06 AM**

Client ID: Run ID: **BTEX1_110301C** SeqNo: **2295910** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	24.04	1.0	20	0	120	77-126	23.81	0.955	20	
Toluene	24.56	1.0	20	0	123	80-124	23.92	2.63	20	
Ethylbenzene	24.91	1.0	20	0	125	76-125	24.25	2.69	20	
Xylenes, Total	57.84	3.0	60	0	96.4	79-124	56.82	1.78	20	
Surr: 4-Bromofluorobenzene	*33.39*	1.0	*30*	0	*111*	*77-129*	33.01	*1.15*	*20*	
Surr: Trifluorotoluene	*31.47*	1.0	*30*	0	*105*	*75-130*	31.23	*0.761*	*20*	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Premier Environmental Services
Work Order: 1102759
Project: DS Hugh

QC BATCH REPORT

Batch ID: **R106106** Instrument ID **BTEX1** Method: **SW8021B**

The following samples were analyzed in this batch:

1102759-01A	1102759-02A	1102759-03A
1102759-04A	1102759-05A	1102759-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Premier Environmental Services
Project: DS Hugh
WorkOrder: **1102759**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/L	Milligrams per Liter

☐ ALS Laboratory Group
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Chain of Custody Form

Page 1 of 1

☐ ALS Laboratory Group
3352 128th Ave.
Holland, MI 49424-9263
Tel: +1 616 399 6070
Fax: +1 616 399 6185

ALS Project Manager: | ALS Work Order #: 1102759

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	DS Hugh	A	BTEX (8021)
Work Order		Project Number	265071	B	
Company Name	Premier Environmental Services	Bill To Company	Plains All America, LP	C	
Send Report To	Chan Patel	Invoice Attn		D	
Address	4800 Sugar Grove Blvd. Suite 390	Address	c/o ENV. Accounts Payable P.O. Box 4648	E	
City/State/Zip	Houston, TX 77477	City/State/Zip	Houston, TX 77210-4648	F	
Phone	(281) 240-5200	Phone	(713) 646-4610	G	
Fax	(281) 240-5201	Fax	(713) 646-4199	H	
e-Mail Address		e-Mail Address		I	
				J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW2	2-24-11	1415	G.W.	HCL	3	X										
2	MW3		1420														
3	MW4		1440														
4	MW5		1425														
5	MW6		1430														
6	MW7		1435														
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Matt Grubbs, Stan Miller

Shipment Method: FedEx

Required Turnaround Time: (Check Box) ☐ Std 10 WK Days ☑ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Matt Grubbs	2-24-11	1730	FEDEX
Relinquished by:	Date:	Time:	Received by:
			Stan Miller 2/25/11 1011S
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: 5 Day TAT.

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
☑ Level II Std QC
☐ Level III Std QC/Raw Data
☐ Level IV SW846/CLP
☐ Other / EDD
☐ TRRP CheckList
☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.
2. Unless otherwise agreed in a formal contract, services provided by ALS Laboratory Group are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Environmental

Sample Receipt Checklist

Client Name: **PREMIER ENV** Date/Time Received: **25-Feb-11 10:15**

Work Order: **1102759** Received by: **SAY**

Checklist completed by David Hightower (eSignature) 25-Feb-11 (Date) Reviewed by: Jay Lynn F Thibault (eSignature) 27-Feb-11 (Date)

Matrices: water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.3c	002	
Cooler(s)/Kit(s):	9333		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL

Date: 2-24 Time:
Name:
Company:

Seal Broken By:
Date: 2/25/11

1102759

...m This portion can be removed for Recipient's records.

...to 2-24-11 FedEx Tracking Number 874763320420

...der's ...me [illegible] Phone 432 230-2131

Company [illegible]

Address 30 W. Industrial ... Dept./Floor/Suite/Room

... Midland State TX ZIP

...ur Internal Billing Reference 205021

ALS Environmental

03-Jun-2011

Chan Patel
Premier Environmental Services
4800 Sugar Grove Blvd.
Suite 390
Houston, TX 77477

Tel: (281) 240-5200
Fax: (770) 973-7395

Re: DS Hugh

Work Order: **1106003**

Dear Chan,

ALS Environmental received 8 samples on 01-Jun-2011 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 16.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Patricia L. Lynch

Electronically approved by: Glenda H. Ramos

Patricia L. Lynch
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac

Certificate No: T104704231-09A-TX

ALS Environmental

Date: 03-Jun-11

Client: Premier Environmental Services
Project: DS Hugh
Work Order: 1106003

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1106003-01	MW1	Water		5/31/2011 12:23	6/1/2011 09:00	☐
1106003-02	MW2	Water		5/31/2011 13:05	6/1/2011 09:00	☐
1106003-03	MW3	Water		5/31/2011 13:28	6/1/2011 09:00	☐
1106003-04	MW4	Water		5/31/2011 14:00	6/1/2011 09:00	☐
1106003-05	MW5	Water		5/31/2011 14:35	6/1/2011 09:00	☐
1106003-06	MW6	Water		5/31/2011 15:00	6/1/2011 09:00	☐
1106003-07	MW7	Water		5/31/2011 15:15	6/1/2011 09:00	☐
1106003-08	Trip Blank	Water		5/31/2011	6/1/2011 09:00	☐

ALS Environmental

Date: 07-Jun-11

Client:	Premier Environmental Services
Project:	DS Hugh
Work Order:	1106003

Case Narrative

Batch R110834 BTEX MS/MSD was performed on an unrelated sample.

ALS Environmental

Date: *03-Jun-11*

Client: Premier Environmental Services
Project: DS Hugh
Work Order: 1106003
Sample ID: MW1
Lab ID: 1106003-01
Collection Date: 5/31/2011 12:23 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.40**		**0.010**	**mg/L**	10	6/2/2011 10:57 PM
Toluene	**0.36**		**0.010**	**mg/L**	10	6/2/2011 10:57 PM
Ethylbenzene	**0.30**		**0.010**	**mg/L**	10	6/2/2011 10:57 PM
Xylenes, Total	**0.74**		**0.030**	**mg/L**	10	6/2/2011 10:57 PM
Surr: 4-Bromofluorobenzene	*116*		*77-129*	*%REC*	10	6/2/2011 10:57 PM
Surr: Trifluorotoluene	*116*		*75-130*	*%REC*	10	6/2/2011 10:57 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *03-Jun-11*

Client: Premier Environmental Services
Project: DS Hugh
Work Order: 1106003
Sample ID: MW2
Lab ID: 1106003-02
Collection Date: 5/31/2011 01:05 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	6/2/2011 11:15 PM
Toluene	ND		0.0010	mg/L	1	6/2/2011 11:15 PM
Ethylbenzene	ND		0.0010	mg/L	1	6/2/2011 11:15 PM
Xylenes, Total	ND		0.0030	mg/L	1	6/2/2011 11:15 PM
Surr: 4-Bromofluorobenzene	*99.4*		*77-129*	*%REC*	1	6/2/2011 11:15 PM
Surr: Trifluorotoluene	*108*		*75-130*	*%REC*	1	6/2/2011 11:15 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *03-Jun-11*

Client: Premier Environmental Services
Project: DS Hugh
Work Order: 1106003
Sample ID: MW3
Lab ID: 1106003-03
Collection Date: 5/31/2011 01:28 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	6/2/2011 11:33 PM
Toluene	ND		0.0010	mg/L	1	6/2/2011 11:33 PM
Ethylbenzene	ND		0.0010	mg/L	1	6/2/2011 11:33 PM
Xylenes, Total	ND		0.0030	mg/L	1	6/2/2011 11:33 PM
Surr: 4-Bromofluorobenzene	*99.1*		*77-129*	*%REC*	1	6/2/2011 11:33 PM
Surr: Trifluorotoluene	*108*		*75-130*	*%REC*	1	6/2/2011 11:33 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *03-Jun-11*

Client: Premier Environmental Services
Project: DS Hugh
Work Order: 1106003
Sample ID: MW4
Lab ID: 1106003-04
Collection Date: 5/31/2011 02:00 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.024**		**0.010**	**mg/L**	10	6/2/2011 11:50 PM
Toluene	**0.022**		**0.010**	**mg/L**	10	6/2/2011 11:50 PM
Ethylbenzene	**0.079**		**0.010**	**mg/L**	10	6/2/2011 11:50 PM
Xylenes, Total	**0.28**		**0.030**	**mg/L**	10	6/2/2011 11:50 PM
Surr: 4-Bromofluorobenzene	*107*		*77-129*	*%REC*	10	6/2/2011 11:50 PM
Surr: Trifluorotoluene	*108*		*75-130*	*%REC*	10	6/2/2011 11:50 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *03-Jun-11*

Client: Premier Environmental Services
Project: DS Hugh
Work Order: 1106003
Sample ID: MW5
Lab ID: 1106003-05
Collection Date: 5/31/2011 02:35 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	6/3/2011 12:45 AM
Toluene	ND		0.0010	mg/L	1	6/3/2011 12:45 AM
Ethylbenzene	ND		0.0010	mg/L	1	6/3/2011 12:45 AM
Xylenes, Total	ND		0.0030	mg/L	1	6/3/2011 12:45 AM
Surr: 4-Bromofluorobenzene	*98.1*		*77-129*	*%REC*	1	6/3/2011 12:45 AM
Surr: Trifluorotoluene	*108*		*75-130*	*%REC*	1	6/3/2011 12:45 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *03-Jun-11*

Client: Premier Environmental Services
Project: DS Hugh
Work Order: 1106003
Sample ID: MW6
Lab ID: 1106003-06
Collection Date: 5/31/2011 03:00 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	6/3/2011 01:03 AM
Toluene	ND		0.0010	mg/L	1	6/3/2011 01:03 AM
Ethylbenzene	ND		0.0010	mg/L	1	6/3/2011 01:03 AM
Xylenes, Total	ND		0.0030	mg/L	1	6/3/2011 01:03 AM
Surr: 4-Bromofluorobenzene	*97.2*		*77-129*	*%REC*	1	6/3/2011 01:03 AM
Surr: Trifluorotoluene	*109*		*75-130*	*%REC*	1	6/3/2011 01:03 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *03-Jun-11*

Client: Premier Environmental Services
Project: DS Hugh
Work Order: 1106003
Sample ID: MW7
Lab ID: 1106003-07
Collection Date: 5/31/2011 03:15 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	6/3/2011 01:21 AM
Toluene	ND		0.0010	mg/L	1	6/3/2011 01:21 AM
Ethylbenzene	ND		0.0010	mg/L	1	6/3/2011 01:21 AM
Xylenes, Total	ND		0.0030	mg/L	1	6/3/2011 01:21 AM
Surr: 4-Bromofluorobenzene	*98.1*		*77-129*	*%REC*	1	6/3/2011 01:21 AM
Surr: Trifluorotoluene	*109*		*75-130*	*%REC*	1	6/3/2011 01:21 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 03-Jun-11

Client: Premier Environmental Services

Work Order: 1106003

Project: DS Hugh

QC BATCH REPORT

Batch ID: **R110834** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **BBLKW2-060211-R110834** Units: **µg/L** Analysis Date: **6/2/2011 09:44 PM**

Client ID: Run ID: **BTEX1_110602C** SeqNo: **2411224** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 4-Bromofluorobenzene	*30.02*	1.0	*30*	0	*100*	*77-129*	0			
Surr: Trifluorotoluene	*32.23*	1.0	*30*	0	*107*	*75-130*	0			

LCS Sample ID: **BLCSW2-060211-R110834** Units: **µg/L** Analysis Date: **6/2/2011 09:08 PM**

Client ID: Run ID: **BTEX1_110602C** SeqNo: **2411222** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.74	1.0	20	0	88.7	77-126	0			
Toluene	17.96	1.0	20	0	89.8	80-124	0			
Ethylbenzene	18.74	1.0	20	0	93.7	76-125	0			
Xylenes, Total	56.12	3.0	60	0	93.5	79-124	0			
Surr: 4-Bromofluorobenzene	*31.54*	1.0	*30*	0	*105*	*77-129*	0			
Surr: Trifluorotoluene	*32.98*	1.0	*30*	0	*110*	*75-130*	0			

LCSD Sample ID: **BLCSDW2-060211-R110834** Units: **µg/L** Analysis Date: **6/2/2011 09:26 PM**

Client ID: Run ID: **BTEX1_110602C** SeqNo: **2411223** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.02	1.0	20	0	85.1	77-126	17.74	4.17	20	
Toluene	17.27	1.0	20	0	86.4	80-124	17.96	3.88	20	
Ethylbenzene	17.97	1.0	20	0	89.8	76-125	18.74	4.23	20	
Xylenes, Total	53.82	3.0	60	0	89.7	79-124	56.12	4.18	20	
Surr: 4-Bromofluorobenzene	*31*	1.0	*30*	0	*103*	*77-129*	31.54	*1.74*	*20*	
Surr: Trifluorotoluene	*32.77*	1.0	*30*	0	*109*	*75-130*	32.98	*0.659*	*20*	

MS Sample ID: **1106011-01AMS** Units: **µg/L** Analysis Date: **6/2/2011 10:21 PM**

Client ID: Run ID: **BTEX1_110602C** SeqNo: **2411226** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	25.91	1.0	20	0	130	77-126	0			S
Toluene	26.46	1.0	20	0	132	80-124	0			S
Ethylbenzene	28.98	1.0	20	0	145	76-125	0			S
Xylenes, Total	89.2	3.0	60	0	149	79-124	0			S
Surr: 4-Bromofluorobenzene	*31.48*	1.0	*30*	0	*105*	*77-129*	0			
Surr: Trifluorotoluene	*33.29*	1.0	*30*	0	*111*	*75-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Premier Environmental Services
Work Order: 1106003
Project: DS Hugh

QC BATCH REPORT

Batch ID: **R110834** Instrument ID **BTEX1** Method: **SW8021B**

MSD Sample ID: **1106011-01AMSD** Units: **µg/L** Analysis Date: **6/2/2011 10:39 PM**

Client ID: Run ID: **BTEX1_110602C** SeqNo: **2411227** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	14.36	1.0	20	0	71.8	77-126	25.91	57.4	20	SR
Toluene	14.67	1.0	20	0	73.3	80-124	26.46	57.3	20	SR
Ethylbenzene	15.74	1.0	20	0	78.7	76-125	28.98	59.2	20	R
Xylenes, Total	52.16	3.0	60	0	86.9	79-124	89.2	52.4	20	R
Surr: 4-Bromofluorobenzene	*30.99*	1.0	*30*	0	*103*	*77-129*	31.48	*1.58*	*20*	
Surr: Trifluorotoluene	*32.73*	1.0	*30*	0	*109*	*75-130*	33.29	*1.7*	*20*	

The following samples were analyzed in this batch:

1106003-01A	1106003-02A	1106003-03A
1106003-04A	1106003-05A	1106003-06A
1106003-07A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Date: 03-Jun-11

Client: Premier Environmental Services
Project: DS Hugh
WorkOrder: 1106003

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/L	Milligrams per Liter

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Chain of Custody Form

Page 1 of 1

COC ID: 28752

1106003

PREMIER ENV: Premier Environmental Services

Project: DS Hugh

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	DS Hugh	A	BTEX (8021)
Work Order		Project Number		B	
Company Name	Premier Environmental Services	Bill To Company	Plains All America, LP	C	
Send Report To	Chan Patel	Invoice Attn		D	
Address	4800 Sugar Grove Blvd. Suite 390	Address	c/o ENV. Accounts Payable P.O. Box 4648	E	
				F	
City/State/Zip	Houston, TX 77477	City/State/Zip	Houston, TX 77210-4648	G	
Phone	(281) 240-5200	Phone	(713) 646-4610	H	
Fax	(281) 240-5201	Fax	(713) 646-4199	I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW 1	5-31	1223	W	HCl	3	3										
2	MW 2		1305														
3	MW 3		1328														
4	MW 4		1400														
5	MW 5		1435														
6	MW 6	↓	1500	↓	↓	↓	↓										
7	MW 7	5-31	1515	W	HCl	3	3										
8																	
9																	
10																	

Sampler(s) Please Print & Sign: SHANE A DILLER

Shipment Method: FED EX

Required Turnaround Time: (Check Box) ☐ Std 10 WK Days ☑ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
	5-31	1730	
Relinquished by:	Date:	Time:	Received by (Laboratory):
			6.1.11 0900
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: 5 Day TAT.

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
- ☑ Level II Std QC
- ☐ Level III Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other / EDD
- ☐ TRRP CheckList
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

1106003

ALS Environmental
10450 Stancliff Rd Suite 210
Houston, Texas 77099
Tel. +1 281 530 56
Fax. +1 281 530 58

Date: 5-3
Name:
Company:

CUSTODY SEAL
Time: 1730

Seal Broken By:
Date: 6.1.11

FedEx
TRK# 0215 8758 9495 2085

WED - 01 JUN A2
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US IAH

#704285 05/31 50DG1/0CB0/7EFB

ALS Environmental

Sample Receipt Checklist

Client Name: **PREMIER ENV** Date/Time Received: **01-Jun-11 09:00**

Work Order: **1106003** Received by: **PMG**

Checklist completed by Salvador A. Yanez (eSignature) 01-Jun-11 (Date) Reviewed by: Ed B. Fry (eSignature) 01-Jun-11 (Date)

Matrices: Water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☑	Not Present ☐
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.6c	002	
Cooler(s)/Kit(s):	Green 28ct.		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes: Trip Blank not on COC, Login w/ out Analysis.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ALS Environmental

06-Sep-2011

Chan Patel
EarthCon Consultants, Inc.
4800 Sugar Grove Blvd.
Suite 390
Houston, TX 77477

Tel: (281) 240-5200
Fax: (770) 973-7395

Re: DS Hugh

Work Order: **1108973**

Dear Chan,

ALS Environmental received 7 samples on 30-Aug-2011 09:35 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 14.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Patricia L. Lynch

Electronically approved by: Makenzie L. Henderson

Patricia L. Lynch
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac

Certificate No: T104704231-09A-TX

ALS Environmental

Date: 06-Sep-11

Client: EarthCon Consultants, Inc.
Project: DS Hugh
Work Order: **1108973**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1108973-01	MW2	Water		8/29/2011 11:20	8/30/2011 09:35	☐
1108973-02	MW3	Water		8/29/2011 11:25	8/30/2011 09:35	☐
1108973-03	MW4	Water		8/29/2011 11:30	8/30/2011 09:35	☐
1108973-04	MW5	Water		8/29/2011 11:35	8/30/2011 09:35	☐
1108973-05	MW6	Water		8/29/2011 11:40	8/30/2011 09:35	☐
1108973-06	MW7	Water		8/29/2011 11:45	8/30/2011 09:35	☐
1108973-07	Trip Blank	Water		8/29/2011	8/30/2011 09:35	☐

Client:	EarthCon Consultants, Inc.
Project:	DS Hugh
Work Order:	1108973

Case Narrative

Results for toluene in sample MW4 and for xylenes in sample MW5 are flagged with P due to coelution or possible matrix interference on either the identification or the confirmation column. The lower of the two results is reported per the method.

ALS Environmental

Date: *06-Sep-11*

Client: EarthCon Consultants, Inc.
Project: DS Hugh
Sample ID: MW2
Collection Date: 8/29/2011 11:20 AM

Work Order: 1108973
Lab ID: 1108973-01
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **RPM**
Benzene	ND		0.0010	mg/L	1	9/2/2011 02:28 PM
Toluene	ND		0.0010	mg/L	1	9/2/2011 02:28 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/2/2011 02:28 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/2/2011 02:28 PM
Surr: 4-Bromofluorobenzene	*88.5*		*77-129*	*%REC*	1	9/2/2011 02:28 PM
Surr: Trifluorotoluene	*114*		*75-130*	*%REC*	1	9/2/2011 02:28 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Sep-11*

Client: EarthCon Consultants, Inc.
Project: DS Hugh
Sample ID: MW3
Collection Date: 8/29/2011 11:25 AM

Work Order: 1108973
Lab ID: 1108973-02
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **RPM**
Benzene	ND		0.0010	mg/L	1	9/2/2011 03:38 PM
Toluene	ND		0.0010	mg/L	1	9/2/2011 03:38 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/2/2011 03:38 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/2/2011 03:38 PM
Surr: 4-Bromofluorobenzene	*85.3*		*77-129*	*%REC*	1	9/2/2011 03:38 PM
Surr: Trifluorotoluene	*108*		*75-130*	*%REC*	1	9/2/2011 03:38 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Sep-11*

Client: EarthCon Consultants, Inc.
Project: DS Hugh
Work Order: 1108973
Sample ID: MW4
Lab ID: 1108973-03
Collection Date: 8/29/2011 11:30 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **RPM**
Benzene	**0.014**		**0.0010**	**mg/L**	1	9/2/2011 06:31 PM
Toluene	**0.0035**	P	**0.0010**	**mg/L**	1	9/2/2011 06:31 PM
Ethylbenzene	**0.11**		**0.0010**	**mg/L**	1	9/2/2011 06:31 PM
Xylenes, Total	**0.28**		**0.0030**	**mg/L**	1	9/2/2011 06:31 PM
Surr: 4-Bromofluorobenzene	*91.6*		*77-129*	*%REC*	1	9/2/2011 06:31 PM
Surr: Trifluorotoluene	*119*		*75-130*	*%REC*	1	9/2/2011 06:31 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Sep-11*

Client: EarthCon Consultants, Inc.
Project: DS Hugh
Work Order: 1108973
Sample ID: MW5
Lab ID: 1108973-04
Collection Date: 8/29/2011 11:35 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **RPM**
Benzene	ND		0.0010	mg/L	1	9/2/2011 03:55 PM
Toluene	ND		0.0010	mg/L	1	9/2/2011 03:55 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/2/2011 03:55 PM
Xylenes, Total	ND	P	0.0030	mg/L	1	9/2/2011 03:55 PM
Surr: 4-Bromofluorobenzene	*88.4*		*77-129*	*%REC*	1	9/2/2011 03:55 PM
Surr: Trifluorotoluene	*110*		*75-130*	*%REC*	1	9/2/2011 03:55 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Sep-11*

Client:	EarthCon Consultants, Inc.		
Project:	DS Hugh	**Work Order:**	1108973
Sample ID:	MW6	**Lab ID:**	1108973-05
Collection Date:	8/29/2011 11:40 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **RPM**
Benzene	ND		0.0010	mg/L	1	9/2/2011 04:12 PM
Toluene	ND		0.0010	mg/L	1	9/2/2011 04:12 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/2/2011 04:12 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/2/2011 04:12 PM
Surr: 4-Bromofluorobenzene	*80.8*		*77-129*	*%REC*	1	9/2/2011 04:12 PM
Surr: Trifluorotoluene	*102*		*75-130*	*%REC*	1	9/2/2011 04:12 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Sep-11*

Client: EarthCon Consultants, Inc.
Project: DS Hugh
Sample ID: MW7
Collection Date: 8/29/2011 11:45 AM

Work Order: 1108973
Lab ID: 1108973-06
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **RPM**
Benzene	ND		0.0010	mg/L	1	9/2/2011 04:30 PM
Toluene	ND		0.0010	mg/L	1	9/2/2011 04:30 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/2/2011 04:30 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/2/2011 04:30 PM
Surr: 4-Bromofluorobenzene	*82.7*		*77-129*	*%REC*	1	9/2/2011 04:30 PM
Surr: Trifluorotoluene	*104*		*75-130*	*%REC*	1	9/2/2011 04:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 06-Sep-11

Client: EarthCon Consultants, Inc.

QC BATCH REPORT

Work Order: 1108973

Project: DS Hugh

Batch ID: **R115569** Instrument ID **BTEX3** Method: **SW8021B**

MBLK Sample ID: **BBLKW1-110902-R115569** Units: **µg/L** Analysis Date: **9/2/2011 09:50 AM**

Client ID: Run ID: **BTEX3_110902A** SeqNo: **2514179** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 4-Bromofluorobenzene	*24.95*	1.0	*30*	0	*83.2*	*77-129*	0			
Surr: Trifluorotoluene	*32.05*	1.0	*30*	0	*107*	*75-130*	0			

LCS Sample ID: **BLCSW1-110902-R115569** Units: **µg/L** Analysis Date: **9/2/2011 09:12 AM**

Client ID: Run ID: **BTEX3_110902A** SeqNo: **2514177** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.25	1.0	20	0	111	77-126	0			
Toluene	22.88	1.0	20	0	114	80-124	0			
Ethylbenzene	22.71	1.0	20	0	114	76-125	0			
Xylenes, Total	67.7	3.0	60	0	113	79-124	0			
Surr: 4-Bromofluorobenzene	*25.95*	1.0	*30*	0	*86.5*	*77-129*	0			
Surr: Trifluorotoluene	*32.25*	1.0	*30*	0	*107*	*75-130*	0			

MS Sample ID: **1108973-01AMS** Units: **µg/L** Analysis Date: **9/2/2011 02:46 PM**

Client ID: **MW2** Run ID: **BTEX3_110902A** SeqNo: **2515389** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.16	1.0	20	0	101	77-126	0			
Toluene	20.1	1.0	20	0	101	80-124	0			
Ethylbenzene	20.18	1.0	20	0	101	76-125	0			
Xylenes, Total	60.07	3.0	60	0	100	79-124	0			
Surr: 4-Bromofluorobenzene	*26.88*	1.0	*30*	0	*89.6*	*77-129*	0			
Surr: Trifluorotoluene	*33.82*	1.0	*30*	0	*113*	*75-130*	0			

MSD Sample ID: **1108973-01AMSD** Units: **µg/L** Analysis Date: **9/2/2011 03:03 PM**

Client ID: **MW2** Run ID: **BTEX3_110902A** SeqNo: **2515390** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.76	1.0	20	0	104	77-126	20.16	2.94	20	
Toluene	21.19	1.0	20	0	106	80-124	20.1	5.26	20	
Ethylbenzene	20.45	1.0	20	0	102	76-125	20.18	1.33	20	
Xylenes, Total	62.21	3.0	60	0	104	79-124	60.07	3.49	20	
Surr: 4-Bromofluorobenzene	*26.27*	1.0	*30*	0	*87.6*	*77-129*	26.88	*2.26*	*20*	
Surr: Trifluorotoluene	*32.42*	1.0	*30*	0	*108*	*75-130*	33.82	*4.23*	*20*	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: EarthCon Consultants, Inc.
Work Order: 1108973
Project: DS Hugh

QC BATCH REPORT

Batch ID: **R115569** Instrument ID **BTEX3** Method: **SW8021B**

The following samples were analyzed in this batch:

1108973-01A	1108973-02A	1108973-03A
1108973-04A	1108973-05A	1108973-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Date: 06-Sep-11

Client: EarthCon Consultants, Inc.
Project: DS Hugh
WorkOrder: 1108973

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/L	Milligrams per Liter

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Chain of Custody Form

Page 1 of 1

COC ID: 24643

1108973

PREMIER ENV: EarthCon Consultants, Inc.

Project: DS Hugh

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name		A	
Work Order		Project Number	205071	B	
Company Name		Bill To Company		C	
Send Report To		Invoice Attn		D	
Address		Address		E	
				F	
City/State/Zip		City/State/Zip		G	
Phone		Phone		H	
Fax		Fax		I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW2	8-29-11	11:20	G.W	HCL	3	X										
2	MW3		11:25														
3	MW4		11:30														
4	MW5		11:35														
5	MW6		11:40														
6	MW7		11:45														
7	~~MW8~~																
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Matt Grubbs Shane Miller

Shipment Method: FedEx

Required Turnaround Time: (Check Box)

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Matt Grubbs	8-29-11	17:30	FedEx
Relinquished by:	Date:	Time:	Received by (Laboratory): 8/30/11 0935
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Environmental

Sample Receipt Checklist

Client Name: **PREMIER ENV** Date/Time Received: **30-Aug-11 09:35**

Work Order: **1108973** Received by: **RNG**

Checklist completed by Robert D. Harris (eSignature) 30-Aug-11 (Date) Reviewed by: Patricia L. Lynch (eSignature) 01-Sep-11 (Date)

Matrices: waters
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.9c	002	
Cooler(s)/Kit(s):	3875		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes: Trip blank not on COC; logged in without analysis.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ALS Environmental

06-Dec-2011

Kathleen Buxton
EarthCon Consultants, Inc.
4800 Sugar Grove Blvd.
Suite 390
Houston, TX 77477

Tel: (281) 240-5200
Fax: (281) 240-5201

Re: D S Hugh

Work Order: **1111900**

Dear Kathleen,

ALS Environmental received 7 samples on 30-Nov-2011 09:35 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 18.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Patricia L. Lynch

Electronically approved by: Yvan K. Ty

Patricia L. Lynch
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac

Certificate No: TX: T104704231-11-5

ALS Environmental

Date: 06-Dec-11

Client: EarthCon Consultants, Inc.
Project: D S Hugh
Work Order: **1111900**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1111900-01	MW-2	Water		11/28/2011 17:05	11/30/2011 09:35	☐
1111900-02	MW 3	Water		11/28/2011 17:10	11/30/2011 09:35	☐
1111900-03	MW 4	Water		11/28/2011 17:15	11/30/2011 09:35	☐
1111900-04	MW 5	Water		11/28/2011 17:20	11/30/2011 09:35	☐
1111900-05	MW 6	Water		11/28/2011 17:25	11/30/2011 09:35	☐
1111900-06	MW 7	Water		11/28/2011 17:30	11/30/2011 09:35	☐
1111900-07	Trip Blank - 101811-38	Water		11/28/2011	11/30/2011 09:35	☐

ALS Environmental

Date: 07-Dec-11

Client:	EarthCon Consultants, Inc.
Project:	D S Hugh
Work Order:	1111900

Case Narrative

No exceptions.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: D S Hugh
Sample ID: MW-2
Collection Date: 11/28/2011 05:05 PM

Work Order: 1111900
Lab ID: 1111900-01
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	ND		0.0010	mg/L	1	12/1/2011 12:08 PM
Toluene	ND		0.0010	mg/L	1	12/1/2011 12:08 PM
Ethylbenzene	ND		0.0010	mg/L	1	12/1/2011 12:08 PM
Xylenes, Total	ND		0.0030	mg/L	1	12/1/2011 12:08 PM
Surr: 4-Bromofluorobenzene	*91.7*		*77-129*	*%REC*	1	12/1/2011 12:08 PM
Surr: Trifluorotoluene	*91.7*		*75-130*	*%REC*	1	12/1/2011 12:08 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: D S Hugh
Work Order: 1111900
Sample ID: MW 3
Lab ID: 1111900-02
Collection Date: 11/28/2011 05:10 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	ND		0.0010	mg/L	1	12/1/2011 05:17 PM
Toluene	ND		0.0010	mg/L	1	12/1/2011 05:17 PM
Ethylbenzene	ND		0.0010	mg/L	1	12/1/2011 05:17 PM
Xylenes, Total	ND		0.0030	mg/L	1	12/1/2011 05:17 PM
Surr: 4-Bromofluorobenzene	*90.8*		*77-129*	*%REC*	1	12/1/2011 05:17 PM
Surr: Trifluorotoluene	*90.7*		*75-130*	*%REC*	1	12/1/2011 05:17 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: D S Hugh
Work Order: 1111900
Sample ID: MW 4
Lab ID: 1111900-03
Collection Date: 11/28/2011 05:15 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	**0.0091**		**0.0010**	**mg/L**	1	12/1/2011 05:34 PM
Toluene	ND		0.0010	mg/L	1	12/1/2011 05:34 PM
Ethylbenzene	**0.10**		**0.0010**	**mg/L**	1	12/1/2011 05:34 PM
Xylenes, Total	**0.18**		**0.0030**	**mg/L**	1	12/1/2011 05:34 PM
Surr: 4-Bromofluorobenzene	*92.8*		*77-129*	*%REC*	1	12/1/2011 05:34 PM
Surr: Trifluorotoluene	*117*		*75-130*	*%REC*	1	12/1/2011 05:34 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: D S Hugh
Work Order: 1111900
Sample ID: MW 5
Lab ID: 1111900-04
Collection Date: 11/28/2011 05:20 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	ND		0.0010	mg/L	1	12/1/2011 06:26 PM
Toluene	ND		0.0010	mg/L	1	12/1/2011 06:26 PM
Ethylbenzene	ND		0.0010	mg/L	1	12/1/2011 06:26 PM
Xylenes, Total	ND		0.0030	mg/L	1	12/1/2011 06:26 PM
Surr: 4-Bromofluorobenzene	*91.0*		*77-129*	*%REC*	1	12/1/2011 06:26 PM
Surr: Trifluorotoluene	*90.1*		*75-130*	*%REC*	1	12/1/2011 06:26 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: D S Hugh
Work Order: 1111900
Sample ID: MW 6
Lab ID: 1111900-05
Collection Date: 11/28/2011 05:25 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	ND		0.0010	mg/L	1	12/1/2011 06:43 PM
Toluene	ND		0.0010	mg/L	1	12/1/2011 06:43 PM
Ethylbenzene	ND		0.0010	mg/L	1	12/1/2011 06:43 PM
Xylenes, Total	ND		0.0030	mg/L	1	12/1/2011 06:43 PM
Surr: 4-Bromofluorobenzene	*90.7*		*77-129*	*%REC*	1	12/1/2011 06:43 PM
Surr: Trifluorotoluene	*90.4*		*75-130*	*%REC*	1	12/1/2011 06:43 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: D S Hugh
Work Order: 1111900
Sample ID: MW 7
Lab ID: 1111900-06
Collection Date: 11/28/2011 05:30 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	ND		0.0010	mg/L	1	12/1/2011 07:01 PM
Toluene	ND		0.0010	mg/L	1	12/1/2011 07:01 PM
Ethylbenzene	ND		0.0010	mg/L	1	12/1/2011 07:01 PM
Xylenes, Total	ND		0.0030	mg/L	1	12/1/2011 07:01 PM
Surr: 4-Bromofluorobenzene	*89.2*		*77-129*	*%REC*	1	12/1/2011 07:01 PM
Surr: Trifluorotoluene	*90.3*		*75-130*	*%REC*	1	12/1/2011 07:01 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: D S Hugh
Work Order: 1111900
Sample ID: Trip Blank - 101811-38
Lab ID: 1111900-07
Collection Date: 11/28/2011
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	ND		0.0010	mg/L	1	12/5/2011 11:48 AM
Toluene	ND		0.0010	mg/L	1	12/5/2011 11:48 AM
Ethylbenzene	ND		0.0010	mg/L	1	12/5/2011 11:48 AM
Xylenes, Total	ND		0.0030	mg/L	1	12/5/2011 11:48 AM
Surr: 4-Bromofluorobenzene	*92.7*		*77-129*	*%REC*	1	12/5/2011 11:48 AM
Surr: Trifluorotoluene	*84.4*		*75-130*	*%REC*	1	12/5/2011 11:48 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 06-Dec-11

Client: EarthCon Consultants, Inc.

Work Order: 1111900

Project: D S Hugh

QC BATCH REPORT

Batch ID: **R120044** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **BBLKW1-111201-R120044** Units: **µg/L** Analysis Date: **12/1/2011 11:16 AM**

Client ID: Run ID: **BTEX1_111201B** SeqNo: **2615139** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 4-Bromofluorobenzene	*26.72*	1.0	*30*	0	*89.1*	*77-129*	0			
Surr: Trifluorotoluene	*27.17*	1.0	*30*	0	*90.6*	*75-130*	0			

LCS Sample ID: **BLCSW1-111201-R120044** Units: **µg/L** Analysis Date: **12/1/2011 10:23 AM**

Client ID: Run ID: **BTEX1_111201B** SeqNo: **2615137** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.77	1.0	20	0	109	77-126	0			
Toluene	22.26	1.0	20	0	111	80-124	0			
Ethylbenzene	21.88	1.0	20	0	109	76-125	0			
Xylenes, Total	65.27	3.0	60	0	109	79-124	0			
Surr: 4-Bromofluorobenzene	*26.91*	1.0	*30*	0	*89.7*	*77-129*	0			
Surr: Trifluorotoluene	*27.61*	1.0	*30*	0	*92*	*75-130*	0			

LCSD Sample ID: **BLCSDW1-111201-R120044** Units: **µg/L** Analysis Date: **12/1/2011 10:41 AM**

Client ID: Run ID: **BTEX1_111201B** SeqNo: **2615138** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.31	1.0	20	0	91.5	77-126	21.77	17.3	20	
Toluene	18.71	1.0	20	0	93.6	80-124	22.26	17.3	20	
Ethylbenzene	18.26	1.0	20	0	91.3	76-125	21.88	18.1	20	
Xylenes, Total	54.42	3.0	60	0	90.7	79-124	65.27	18.1	20	
Surr: 4-Bromofluorobenzene	*26.99*	1.0	*30*	0	*90*	*77-129*	26.91	*0.276*	*20*	
Surr: Trifluorotoluene	*28.09*	1.0	*30*	0	*93.6*	*75-130*	27.61	*1.75*	*20*	

MS Sample ID: **1111900-01AMS** Units: **µg/L** Analysis Date: **12/1/2011 12:25 PM**

Client ID: **MW-2** Run ID: **BTEX1_111201B** SeqNo: **2615141** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	23	1.0	20	0	115	77-126	0			
Toluene	23.02	1.0	20	0	115	80-124	0			
Ethylbenzene	22.93	1.0	20	0	115	76-125	0			
Xylenes, Total	68.14	3.0	60	0	114	79-124	0			
Surr: 4-Bromofluorobenzene	*27.23*	1.0	*30*	0	*90.8*	*77-129*	0			
Surr: Trifluorotoluene	*27.92*	1.0	*30*	0	*93.1*	*75-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: EarthCon Consultants, Inc.
Work Order: 1111900
Project: D S Hugh

QC BATCH REPORT

Batch ID: **R120044** Instrument ID **BTEX1** Method: **SW8021B**

MSD Sample ID: **1111900-01AMSD** Units: **µg/L** Analysis Date: **12/1/2011 12:43 PM**

Client ID: **MW-2** Run ID: **BTEX1_111201B** SeqNo: **2615142** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.54	1.0	20	0	113	77-126	23	1.99	20	
Toluene	22.67	1.0	20	0	113	80-124	23.02	1.53	20	
Ethylbenzene	22.6	1.0	20	0	113	76-125	22.93	1.43	20	
Xylenes, Total	67.28	3.0	60	0	112	79-124	68.14	1.27	20	
Surr: 4-Bromofluorobenzene	*27.2*	1.0	*30*	0	*90.7*	*77-129*	27.23	*0.0784*	*20*	
Surr: Trifluorotoluene	*27.55*	1.0	*30*	0	*91.8*	*75-130*	27.92	*1.33*	*20*	

The following samples were analyzed in this batch:

1111900-01A	1111900-02A	1111900-03A
1111900-04A	1111900-05A	1111900-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: EarthCon Consultants, Inc.
Work Order: 1111900
Project: D S Hugh

QC BATCH REPORT

Batch ID: **R120134** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **BBLKW1-111205-R120134** Units: **µg/L** Analysis Date: **12/5/2011 11:27 AM**
Client ID: Run ID: **BTEX1_111205A** SeqNo: **2617385** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 4-Bromofluorobenzene	*28.16*	1.0	*30*	0	*93.9*	*77-129*	0			
Surr: Trifluorotoluene	*25.62*	1.0	*30*	0	*85.4*	*75-130*	0			

LCS Sample ID: **BLCSW1-111205-R120134** Units: **µg/L** Analysis Date: **12/5/2011 10:34 AM**
Client ID: Run ID: **BTEX1_111205A** SeqNo: **2617383** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.94	1.0	20	0	105	77-126	0			
Toluene	20.57	1.0	20	0	103	80-124	0			
Ethylbenzene	20.75	1.0	20	0	104	76-125	0			
Xylenes, Total	63.5	3.0	60	0	106	79-124	0			
Surr: 4-Bromofluorobenzene	*28.33*	1.0	*30*	0	*94.4*	*77-129*	0			
Surr: Trifluorotoluene	*25.83*	1.0	*30*	0	*86.1*	*75-130*	0			

LCSD Sample ID: **BLCSDW1-111205-R120134** Units: **µg/L** Analysis Date: **12/5/2011 10:52 AM**
Client ID: Run ID: **BTEX1_111205A** SeqNo: **2617384** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.45	1.0	20	0	107	77-126	20.94	2.4	20	
Toluene	21.12	1.0	20	0	106	80-124	20.57	2.64	20	
Ethylbenzene	21.34	1.0	20	0	107	76-125	20.75	2.79	20	
Xylenes, Total	65.12	3.0	60	0	109	79-124	63.5	2.52	20	
Surr: 4-Bromofluorobenzene	*28.79*	1.0	*30*	0	*96*	*77-129*	28.33	*1.61*	*20*	
Surr: Trifluorotoluene	*25.94*	1.0	*30*	0	*86.5*	*75-130*	25.83	*0.445*	*20*	

MS Sample ID: **1111900-07AMS** Units: **µg/L** Analysis Date: **12/5/2011 12:05 PM**
Client ID: **Trip Blank - 101811-38** Run ID: **BTEX1_111205A** SeqNo: **2617387** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19.7	1.0	20	0	98.5	77-126	0			
Toluene	19.18	1.0	20	0	95.9	80-124	0			
Ethylbenzene	18.83	1.0	20	0	94.2	76-125	0			
Xylenes, Total	57.7	3.0	60	0	96.2	79-124	0			
Surr: 4-Bromofluorobenzene	*28.73*	1.0	*30*	0	*95.8*	*77-129*	0			
Surr: Trifluorotoluene	*26.36*	1.0	*30*	0	*87.9*	*75-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: EarthCon Consultants, Inc.
Work Order: 1111900
Project: D S Hugh

QC BATCH REPORT

Batch ID: **R120134** Instrument ID **BTEX1** Method: **SW8021B**

MSD Sample ID: **1111900-07AMSD** Units: **µg/L** Analysis Date: **12/5/2011 12:23 PM**

Client ID: **Trip Blank - 101811-38** Run ID: **BTEX1_111205A** SeqNo: **2617388** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.27	1.0	20	0	106	77-126	19.7	7.67	20	
Toluene	20.73	1.0	20	0	104	80-124	19.18	7.76	20	
Ethylbenzene	20.53	1.0	20	0	103	76-125	18.83	8.6	20	
Xylenes, Total	62.86	3.0	60	0	105	79-124	57.7	8.57	20	
Surr: 4-Bromofluorobenzene	*28.87*	1.0	*30*	0	*96.2*	*77-129*	28.73	*0.504*	*20*	
Surr: Trifluorotoluene	*26.29*	1.0	*30*	0	*87.6*	*75-130*	26.36	*0.253*	*20*	

The following samples were analyzed in this batch: 1111900-07A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Date: 06-Dec-11

Client: EarthCon Consultants, Inc.
Project: D S Hugh
WorkOrder: **1111900**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/L	Milligrams per Liter

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Chain of Custody Form

Page 1 of 1

COC ID: 29225

1111900

PREMIER ENV: EarthCon Consultants, Inc.

Project: D S Hugh

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	D S Hugh	A	BTEX (8021)
Work Order		Project Number	205071	B	
Company Name	EarthCon Consultants, Inc.	Bill To Company	Plains All America, LP	C	
Send Report To	Kathleen Buxton	Invoice Attn		D	
Address	4800 Sugar Grove Blvd. Suite 390	Address	c/o ENV. Accounts Payable P.O. Box 4648	E F	
City/State/Zip	Houston, TX 77477	City/State/Zip	Houston, TX 77210-4648	G	
Phone	(281) 240-5200	Phone	(713) 646-4610	H	
Fax	(281) 240-5201	Fax	(713) 646-4199	I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW2	11-28-11	17:05	G.W.	HCL	3	X										
2	MW3		17:10														
3	MW4		17:15														
4	MW5		17:20														
5	MW6		17:25														
6	MW7		17:30														
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Matt Grubbs Shane Dollar

Shipment Method: Fed Ex

Required Turnaround Time: (Check Box) ☐ Std 10 WK Days ☑ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by: Matt Grubbs	Date: 11-29-11	Time: 09:30	Received by: FedEx	Notes: 5 Days TAT.
Relinquished by: —	Date:	Time:	Received by (Laboratory): 11.30.11 0935	Cooler ID: 471 / Cooler Temp.
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

QC Package: (Check One Box Below)

- ☑ Level II Std QC
- ☐ Level III Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other / EDD
- ☐ TRRP CheckList
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Environmental

Sample Receipt Checklist

Client Name: **PREMIER ENV** Date/Time Received: **30-Nov-11 09:35**

Work Order: **1111900** Received by: **PMG**

Checklist completed by Paresh M. Giga (eSignature) 30-Nov-11 (Date) Reviewed by: Patricia L. Lynch (eSignature) 02-Dec-11 (Date)

Matrices: Water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.6	002	
Cooler(s)/Kit(s):	4171		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes: Received a trip blank; not on COC. Assigned BTEX.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ALS Environmental 10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887 4171	**CUSTODY SEAL** Date: 11-29-11 Time: 09:48 Name: Natt Grubbs Company: Envirocon	Seal Broken By: [signature] Date: 11.30-11

...This portion can be removed for Recipient's records.

Date 11-29-11	FedEx Tracking Number	898941675033	
Sender's Name Matt Grubbs		Phone 432 220-2173	
Company Envirocon E.S.			
Address 30 W. Industrial Loop		Dept/Floor/Suite/Room	
City Midland		State TX	ZIP 79701
Your Internal Billing Reference 709068			