AP - 41

ANNUAL MONITORING REPORT

YEAR(S): 2011

2011 ANNUAL GROUNDWATER MONITORING REPORT

HUGH GATHERING
LEA COUNTY, NEW MEXICO
UL-P, SECTION 11, T21S, R37E
NMOCD NO.: AP-0041
PLAINS SRS NO.: 2002-10235

RECEIVED
APR 2 2012
Oil Conservation Division
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Santa Fe, NM 87505

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MARCH 2012

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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

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1.0 INTRODUCTION AND OBJECTIVES

1.1 Objectives and Site Background

EarthCon Consultants, Inc. (EarthCon; formerly Premier Environmental Services, Inc.) has prepared this Annual Report (Report) on behalf of Plains Pipeline, L.P. (Plains) for the Hugh Gathering site, SRS No. 2002-10235, located in T21S, R37E, Section 11 of Lea County, New Mexico. The site is approximately two miles east of Eunice, New Mexico, and more specifically at latitude 32°29'11.007"N and longitude 103°07'33.864"W (**Figure 1**). The hydrocarbon impact at the site is the result of a 50-barrel crude oil release that occurred from a six-inch steel pipeline in May 2002. The pipeline was owned by EOTT Energy, LLC (EOTT) at the time of the release, and is currently owned by Plains.

EarthCon was retained by Plains early in 2006 to complete delineation and remediation activities at the Hugh Gathering Site, SRS No. 2002-10235. According to the initial Response Notification (NMOCD Form C-141), Mr. Pat McCasland of Environmental Plus, Inc. (EPI) reported the release, on behalf of Mr. Frank Hernandez of EOTT Energy, LLC (EOTT), to the Mexico Oil Conservation Division (NMOCD). A copy of the C-141 Release Notification Form was provided in the 2010 Annual Report Dated March 2011. The leak was apparently caused by internal or external corrosion, and was repaired. The line was being pressure tested when the leak occurred.

This report presents the data collected at the site during weekly groundwater gauging and phase separated hydrocarbon (PSH) recovery, and four quarterly groundwater sampling events conducted during 2011. The objective of the on-going quarterly groundwater sampling activities at the site is to monitor the concentration of chemicals of concern (COCs) in the affected groundwater. Weekly PSH recovery activities are conducted to remove residual crude oil.

1.2 Previous Remedial Responses and Environmental Investigations

The release was first investigated by Environmental Plus, Inc. (EPI) in May 2002. Information was then reported to the NMOCD through the Release Notification Form C-141.

The total spill-impacted area was approximately 1176 square feet. According to documents available from EPI, the May 2002 release resulted in crude oil impacting two areas on either side of NMSR 18 (**Figure 2**). The crude oil was initially contained in the second pipe before flowing from vent pipes on the east and west sides of NMSR 18 and affecting the surface and subsurface soil at two separate areas. For the ease of discussion, the two impacted areas are hereafter referred to as the east and west side release areas. As part of the initial remediation activities, impacted soils to a depth of approximately four feet below ground surface (bgs) were excavated and disposed of in an NMOCD-approved landfarm.

1.2.1 West Side Investigations and Remediation

Soil and groundwater delineation activities were initiated in September 2002 with the installation of soil borings BH9 to BH16 on the west side, of which BH-10 was converted to a monitor well, MW-1. Phase separated hydrocarbons (PSH) were detected on the surface of the groundwater from monitor well MW-1 at approximately 60 feet bgs.

On the west side of NMSR 18 during June and July 2003, with NMOCD approval, groundwater monitor wells MW-1, through MW-5 were installed (**Figure 2**). Phase separated hydrocarbons (PSH) were discovered on the groundwater in monitor wells MW-1, MW-2 and MW-4. Recovery of PSH from groundwater monitor wells MW-1, MW-2 and MW-4 was initiated on a weekly basis and in August 2003, daily recovery began using a gasoline powered eductor type PSH recovery system by EPI.

In 2004, with NMOCD approval, groundwater monitor wells MW-6 through MW-12, were installed by EPI to further delineate the horizontal extent of PSH and dissolved phase hydrocarbons (**Figure 2**). PSH was observed in groundwater monitor wells MW-8, MW-9 and MW-10. Dissolved phase hydrocarbons consisting of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and polynuclear aromatic hydrocarbons (PAH) constituents were detected in the 2004 analytical results from groundwater monitor well MW-5. BTEX and PAH constituents were not detected at or above the respective laboratory method detection limits (MDLs) in 2004 samples from groundwater monitor wells MW-6, MW-7, MW-11 and MW-12 located on the site periphery. PSH was present in groundwater monitor wells MW-1, MW-2, MW-3, MW-4, MW-8, MW-9 and MW-10 with thicknesses ranging from 0.25 feet to 11.13 feet.

In May 2005, Plains submitted an Abatement Plan to the NMOCD for approval (prepared by EPI). After a public comment period, the NMOCD subsequently approved implementation of the Abatement Plan through a November 5, 2005 letter to Plains.

Site surveillance continued in 2005 with daily PSH removal and inspections, monthly monitoring of groundwater and PSH levels, and quarterly sampling of groundwater monitor wells not impacted with PSH. In August 2005, because of declining PSH thicknesses and recovery volumes, PSH recovery was changed from daily deployment of the PSH recovery system to weekly hand bailing of PSH impacted wells and installation of absorbent socks. In 2005, approximately 550 gallons of crude oil were recovered and reintroduced into the Plains pipeline system. The total recovered volume of oil as of December 31, 2005, including the 600 gallons recovered from 2002 through 2004, was approximately 1,150 gallons.

New Mexico Oil Conservation Division (NMOCD) approved Plains' *Stage 1 and Stage 2 Abatement Plan* (Abatement Plan) for the Site. During December 2006, EPI conducted excavation, confirmation soil sampling, treatment of residual soils using MicroBlaze Spill Control® (MicroBlaze), installation of a passive vapor recovery system, clay liner placement, and backfilling of the site on the west side of NMSR 18. Details of these field activities were presented in the *2006 Annual Report* and in the *Soil Closure Report West Side NMSR 18.*

During December 2006, EPI conducted excavation, confirmation soil sampling, treatment of residual soils using MicroBlaze, installation of a passive vapor recovery system, clay liner placement, and backfilling of the site on the west side of NMSR 18 (the Bryant Property). Details of these field activities were presented in the *2006 Annual Report* and in the *Soil Closure Report West Side NMSR 18.*

1.2.2 East Side Investigations and Remediation

The release on the east side of NMSR 18 was initially delineated with the installation of borings BH1 to BH8 in September 2002. The horizontal extent of soil impact on the east side appears to have covered an approximately 55 feet x 10 feet of surface area from the point of release. The vertical extent of soil impact was delineated to approximately 25 feet bgs and the groundwater was not believed to be affected. In July 2006, additional delineation was completed on the east side, with the installation of soil borings BH9 through BH14. In soil boring BH13, delineation was achieved at a depth of 46 feet bgs. However, in soil boring BH11 delineation could not be completed as refusal was met at 22 feet and hydrocarbons exceeding regulatory guidelines were present at 20 feet bgs.

To address the hydrocarbon impact on the east side of NMSR 18, a work plan was prepared and submitted on May 2, 2008 to the NMOCD and approved. The work plan was implemented during July through October 2008. During the implementation of this work plan, EarthCon supervised the soil remediation activities such as excavation of the top 19 feet of hydrocarbon impacted soil, clay barrier installation, and backfilling of the excavated soils. A *Soil Closure Report East Side NMSR 18* was submitted to NMOCD in October 2008 indicating the completion of the soil remediation activities and the achievement of the target cleanup goals for soil at the site. One monitor well, MW-13 was installed to determine if the groundwater was affected on the east side of NMSR 18. Details of these field activities were presented in the *Soil Closure Report East Side NMSR 18* dated December 2008 and also the *2008 Annual Report.*

To address the constituents of concern (COCs) in groundwater on the east side of NMSR 18, a *Groundwater Investigation and Delineation Work Plan* letter dated February 23, 2010 was submitted to the NMOCD. This work plan proposed the installation of two additional monitor wells on the east side, to delineate the groundwater impact. Pending landowner approval for implementation of this work plan, monitor well MW-13 remains the only well to evaluate the impact to groundwater from the release associated with the east side of the NMSR 18.

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	WQCC Remediation Criteria (mg/L)
Benzene	0.01
Toluene	0.75
Ethylbenzene	0.75
Total Xylenes	0.62
PAHs[1,2]	0.03
Benzo-a-pyrene[2]	0.0007

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

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

1.4 Limitations

EarthCon has examined and relied upon the file information provided by Plains and 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 2011 GROUNDWATER ACTIVITIES

2.1 Groundwater Sample Methodology

Activities conducted at the Hugh Gathering site in 2011 primarily consisted of gauging wells for groundwater levels, determining the presence or absence of PSH, recovering PSH using absorbent socks, hand bailing and submersible pumps in monitor wells. Groundwater sampling of wells not exhibiting PSH was completed to evaluate the extent of the dissolved-phase hydrocarbon plume.

Measurements of the depth to groundwater and product thickness in wells with hydrocarbon sheen or PSH were completed during the weekly PSH recovery and groundwater sampling events. Thirteen groundwater monitor wells (MW-1 through MW-13) were gauged using an oil/water interface probe. The 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. Seven monitoring wells MW-1, MW-2, MW-3, MW-4, MW-8, MW-9, and MW-10 contained a measurable PSH thickness or hydrocarbon sheen during 2011 and were sampled annually. Starting in the second quarter of 2008, all recovery wells and monitor well(s) with PSH or sheen are required to be sampled annually and groundwater samples analyzed for BTEX constituents. Groundwater samples were collected from these wells containing PSH for BTEX in second quarter of 2011. Additional PAH groundwater samples were collected during the December 7, 2011 from MW-13 per the request from the New Mexico Oil Conservation Division (NMOCD) on November 29, 2011.

Groundwater monitor wells not exhibiting PSH or hydrocarbon sheen (MW-5, MW-6, MW-7, MW-11, MW-12, and MW-13) were gauged monthly and sampled quarterly. After collecting and recording groundwater level and PSH thickness measurements, 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 2011 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 every other week) groundwater elevation and PSH thickness measurements were recorded prior to and after PSH recovery and monthly measurements were taken from wells without PSH.

Groundwater elevations and PSH thickness measurements were taken in seven monitor wells (MW-1 through MW-4 and MW-8 through MW-10) during weekly PSH recovery efforts. Groundwater elevation measurements were recorded monthly for six monitor wells (MW-5 through MW-7 and MW-11 through MW-13) without PSH or hydrocarbon sheen. Complete historical groundwater elevation and PSH thickness measurements since February 21, 2007 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, June 3, August 29, and November 29, 2011 (see **Table 1**). The average hydraulic gradient in 2011 was 0.0015 feet/feet (ft/ft), based on groundwater elevations measured between monitor wells MW-6 and MW-12. Groundwater generally flows to the southeast.

2.4 Groundwater Analytical Results

Groundwater at the site was sampled on February 24, June 3, August 29, and November 29 during 2011. Groundwater samples were collected from monitor wells MW-5 through MW-7 and MW-11 through MW13. These samples were analyzed for BTEX constituents using the United States Environmental Protection Agency (USEPA) Method 8021B. Groundwater samples were only collected in the second quarter from recovery wells MW-2, RW-4, and MW-7 through MW-10 due to the presence of PSH.

The 2011 analytical results are presented in **Table 3,** and historical analytical results are presented in **Table 4**. Table **2.1** below summarizes the COC concentrations in which NMOCD Remediation Criteria exceedances were observed in 2011. COC concentrations reported in exceedance of NMOCD standards are marked in **bold**.

Table 2.1						
Well Number	Sample Date	Sample ID	SW 846-8021B			
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
			NMOCD Remediation Criteria			
			0.010	0.750	0.750	0.620
MW-2	06/03/11	1106138-01	**1.8**	0.14	0.22	0.27
MW-4	06/03/11	1106138-02	**0.59**	0.0018	0.26	0.16
MW 7	11/29/11	1111906-03	**0.0110**	<0.0010	<0.0010	<0.0030
MW-8	06/03/11	1106138-06	**3.9**	0.014 P	0.49	0.59
MW-9	06/03/11	1106138-07	**1.2**	0.53	0.27	0.51
MW-10	06/03/11	1106138-08	**0.54**	0.11	0.1	0.15
MW 12	02/24/11	1102756-05	**0.88**	<0.0010	<0.0010	0.039
MW 12	06/03/11	1106138-10	**0.20**	<0.0010	<0.0010	0.013
MW 12	08/29/11	1108994-05	**0.25**	<0.0010	<0.0010	0.033
MW 12	11/29/11	1111906-05	**0.36**	<0.0010	<0.0010	0.021
MW 13	02/24/11	1102756-06	**0.72**	<0.0010	<0.0010	0.045
MW 13	06/03/11	1106138-11	**0.32**	<0.0010	<0.0010	0.020
MW 13	08/29/11	1108994-06	**0.11**	<0.0010	<0.0010	0.0086 P
MW 13	11/29/11	1111906-06	**0.25**	<0.0010	<0.0010	0.005

Note: Concentrations listed in **bold** indicate exceedances of NMOCD criteria
P = Dual column results in percent difference of >40%

Analytical results reported for the groundwater samples collected at MW-5, MW-6, and MW-11 displayed BTEX constituent concentrations below laboratory Method Detection Limits (MDLs) for all four quarters. Analytical results show that MW-2, MW-4, MW-8 through MW-10 had exceeded the NMOCD criteria for benzene during the second quarter. Monitor well MW-7 analytical results show a NMOCD criteria exceedance for benzene during the second quarter. Monitor well samples MW-12 and MW-13 displayed NMOCD criteria exceedances for all four quarters. Monitor Wells MW-5 and MW-7 data exceeded benzene laboratory method detection limits (MDLs) but were below NMOCD remediation criteria in the first three quarters. Additionally, ethylbenzene and total xylene concentrations for all four quarters and toluene concentrations for the third and fourth quarters were greater than the laboratory MDLs in MW-5 but below the NMOCD remediation criteria. Monitor Wells MW-12 and MW-13 also exhibited total xylene concentrations above laboratory MDLs, but below remediation criteria. All the

remaining constituents in these wells and all constituents in wells MW-6 and MW-11 were below laboratory MDLs.

A letter was received from the NMOCD on November 29, 2011 requesting a groundwater sample from MW-13 be analyzed for PAHs. A sample from MW-13 was collected in December 7, 2011 and analyzed for PAHs. No detections were observed in the analysis of PAHs from MW-1.

Groundwater analytical results for 2011 can be found in **Table 3** and all historical sampling results can be found in **Table 4**. PAH analytical results are presented in **Table 5**. 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 monitor wells MW-1 through MW-13 is placed in the 1100-gallon above ground storage tank. These liquids are vacuumed from the tank and transported via vacuum truck for offsite disposal by Key Energy Services of Hobbs, New Mexico.

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 the seven wells with PSH/sheen (wells MW-1 through MW-4 and MW-8 through MW-10) During each site visit, the wells were gauged for PSH and water level measurements to recover measurable PSH (see **Table 2**). Groundwater gauging and 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 5 gallon of PSH and 10 to 30 gallons of groundwater with possible dissolved phase hydrocarbons from each well.

3.2 2011 PSH Recovery

During 2011, measurable PSH was observed in monitor well MW-1 through MW-4 and MW-8 through MW-10. In general, stable trends in the PSH thickness data collected for these wells have been observed.

The PSH observed in recovery well MW-1 indicated a stable PSH thickness during 2011 ranging from 0.2 to 4.12 feet with an average of 2.91 feet. PSH measurements in recovery well MW-2 indicated a PSH thickness during 2011 ranging from no thickness to 0.22 feet with an average of 0.05 feet. The PSH thickness in recovery well MW-3 was never recorded as more than a sheen during 2011. The PSH levels indicated a stable PSH thickness in MW-4, ranging from 0.01 to 0.02 feet. PSH thickness in MW-8 during 2011 was as high as 0.04 feet, but occasionally was not present. The average thickness was 0.01 feet. The maximum thickness in 2011 at MW-9 was 0.88 feet, and also had one day of no recordable thickness. The average PSH thickness at MW-9 was 0.21. MW-10 consistently had a small thickness of PSH, never more than 0.01 feet in 2011.

Weekly PSH recovery at the site in 2011 led to the removal of approximately 58.5 gallons of PSH and 1,467 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

Purged PSH and affected groundwater from monitoring wells MW-1 through MW-4 and MW-8 through MW-10 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 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 chemical of concern (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 PCLE zone migration and decreasing COC concentrations.

4.2 Groundwater Plume Stability and Natural Attenuation

Benzene concentrations of 1.8, 0.59, 3.9, 1.2, and 0.54 mg/L, respectively, were detected in source area wells (MW-2, MW-4, MW-8, MW-9, and MW-10) from the June 2011 sampling event. Note this was the only sampling event of 2011 for these wells.

Figures 5 through **10** depict iso-concentration maps of dissolved benzene in groundwater for the years 2007 through 2011, respectively. These figures illustrate the 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 slight increase compared to the plume characteristics calculated for 2010. The calculated benzene plume mass and benzene plume average concentration for 2010 also indicated 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**.

4.2.1 Ricker Plume Stability Analysis

Plume stability analysis was completed from the dissolved benzene data obtained in 2007 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 (0.40 acres) has been reduced by 2.4 percent since 2007 and has been reduced by nearly 18 percent from a 2007 high of 0.49 acres;
- The average benzene concentration has shown an overall decrease and;
- The 2011 dissolved benzene mass (200 pounds) has been increased by approximately 3.1 percent since 2010 and has been reduced by approximately 59.4 percent from a 2007 high of 493 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 7 feet (up and down-gradient) over the past five years;
- It has not migrated more than 2 feet down-gradient of the most down-gradient edge of the soil removal area and;
- It has receded approximately 7 feet up-gradient between 2007 and 2011.

The plume stability analysis completed for the site includes the development of benzene concentration isopleth maps for the years 2007 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 the wells with PSH have been sampled only during the second quarter groundwater sampling events in 2007 2008, 2009, 2010, and 2011 the benzene

concentrations reported during these five 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 10**. The plume centers of mass for the six years are presented in **Figure 11**. A slight shift to the west of the plume center of mass was observed from 2010 to 2011. The benzene isopleths maps for 2007 through 2011 are presented in **Figures 5** through **9** respectively.

The current area affected by the benzene plume, based on the quarterly groundwater data collected from wells with PSH in 2011 is approximately 18 percent less than that of 2007. The plume average concentration calculated for 2011 is 425 mg/L, compared to 862 mg/L calculated in 2007 and a high of 884 in 2008. The total mass of the benzene plume in 2011 is approximately 293 lbs lower than the total mass computed in 2007. **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)
2007	0.49	862	493
2008	0.46	884	477
2009	0.43	314	158
2010	0.41	399	194
2011	0.40	425	200

The benzene plume area computed from the isopleth maps indicate that the areal extent of the benzene plume at the site continues to decrease. In 2011 and 2010, the plume average concentration and the plume mass indicate an increase compared to the years 2008 and 2009. The plume concentration and plume mass trend increased slightly during 2011.

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:

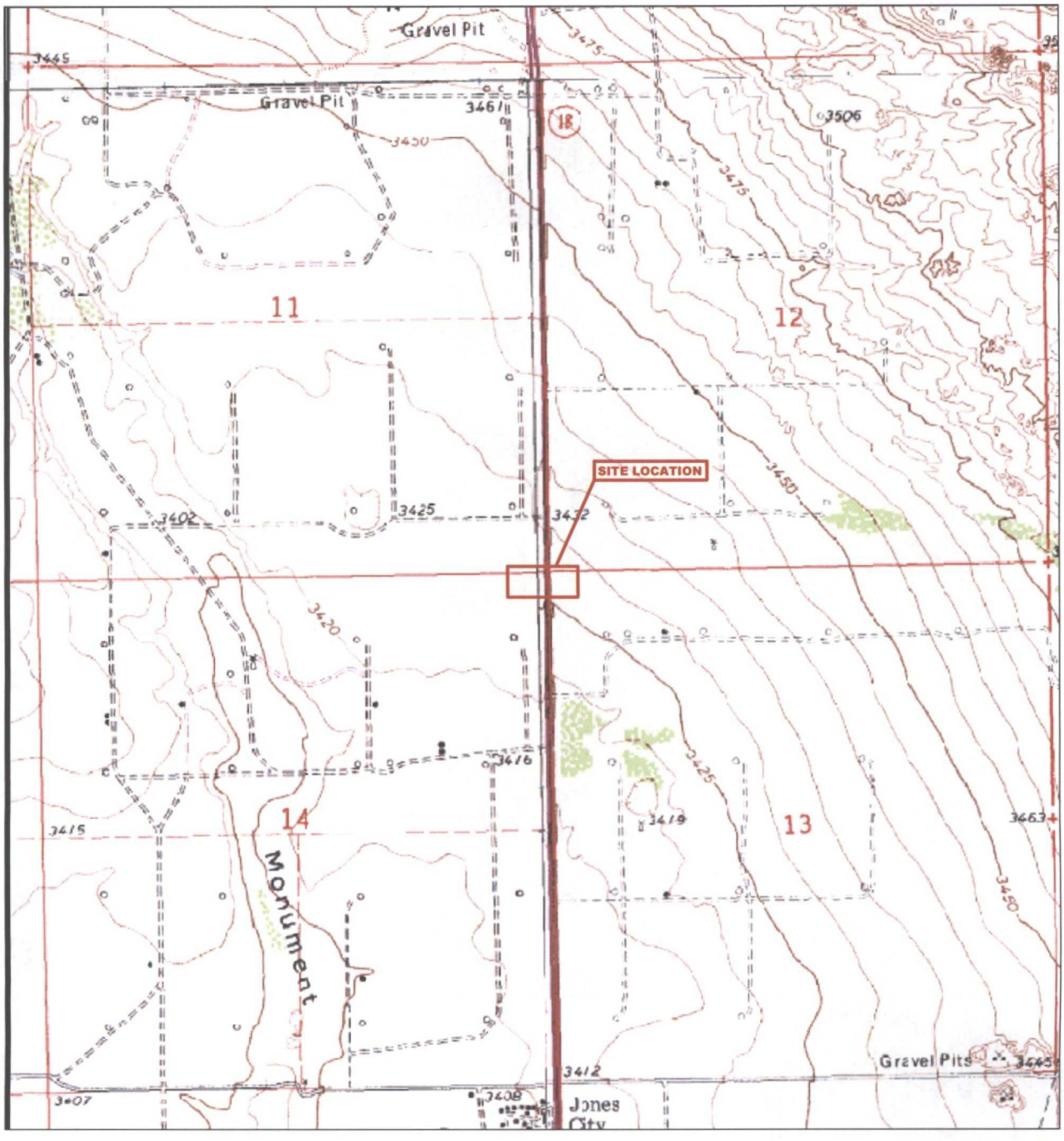
- PSH was identified in the seven monitor wells MW-1 through M-4 and MW-8 through MW-10. The measured PSH thickness is observed to be in a general stable trend.
- Groundwater analytical results for wells without PSH show that BTEX concentrations remained below the NMOCD remediation criteria throughout 2011 with the exception of benzene. The concentration of benzene from the groundwater sample collected from monitor well MW-7 during the first quarter and MW-12 and MW-13 during all four quarters of 2011 exceeded NMOCD criteria.
- A total volume of approximately 1,467 gallons of groundwater containing dissolved phase hydrocarbon and 58.5 of entrained PSH were removed during 2011.
- Plume stability analysis was completed to establish benzene plume characteristics using the 2007 through 2011 benzene concentration data. The plume characteristics obtained from 2007 through 2010 indicated a decreasing benzene plume area, plume mass and average plume concentration. These plume characteristics, when compared to the 2011 computed plume characteristics, indicate that the areal extent of the plume is stable.

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, with monthly gauging and quarterly groundwater sampling to monitor hydrocarbons in groundwater.
- Quarterly sampling of wells MW-5 through MW-7 and MW-11 through MW-13 will be continued and wells with PSH or sheen (MW-1 through MW-4 and MW-8 through MW-10) will be sampled annually.
- Plume stability analysis and data evaluation will be completed for the quarterly data obtained during the 2012 sampling events. A statistical trend analysis will also be performed 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 NE Quadrangle
32°29'11"N Latitude & 103°07'31"W Longitude

0 1/2 mile 1 mile
Distance in Miles

EARTHCON℠
Environmental Challenges
BUSINESS SOLUTIONS

Figure 1
Site Location Map
Hugh Gathering
SRS. #: 2002-10235
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 207032.00	DATE: 12/11

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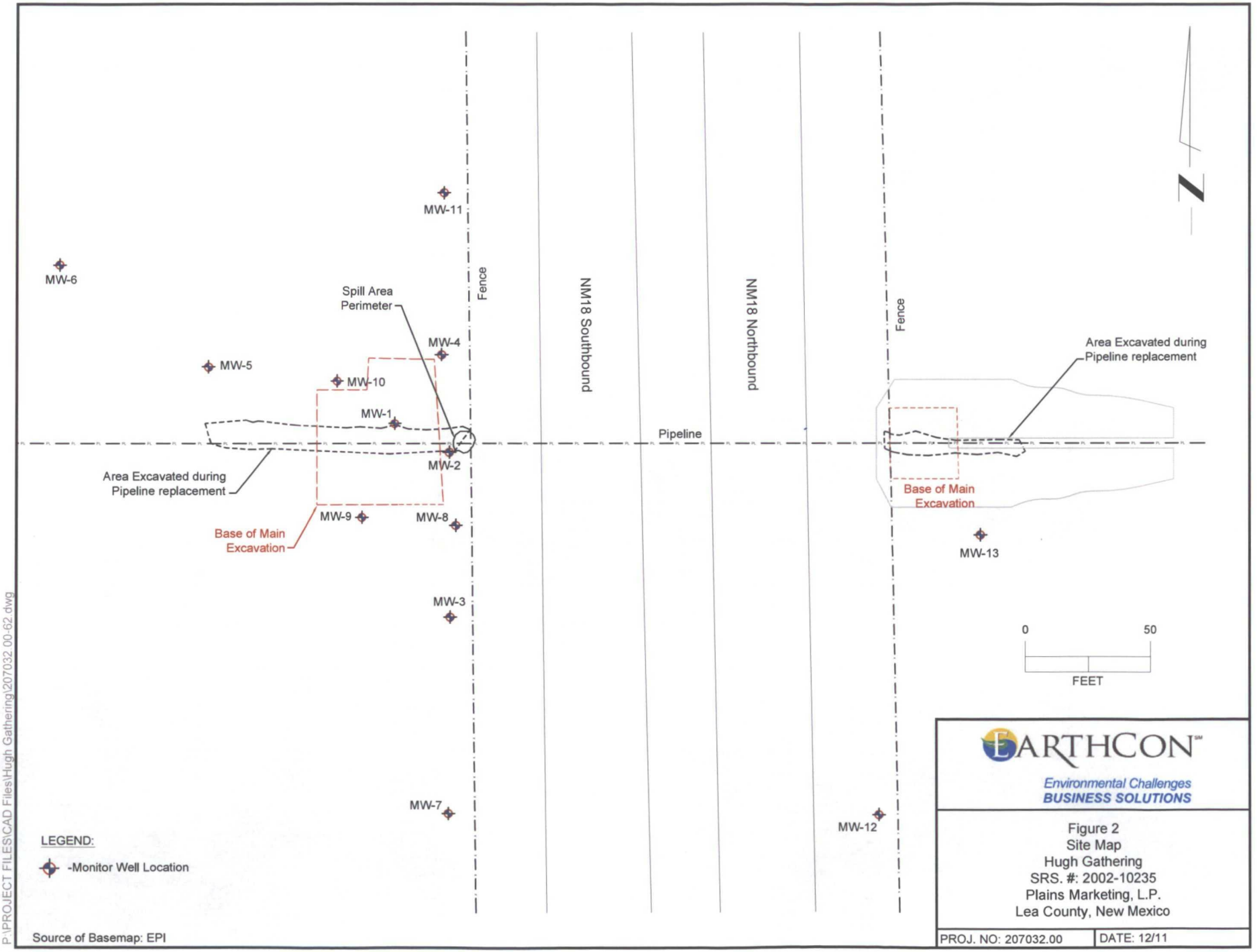


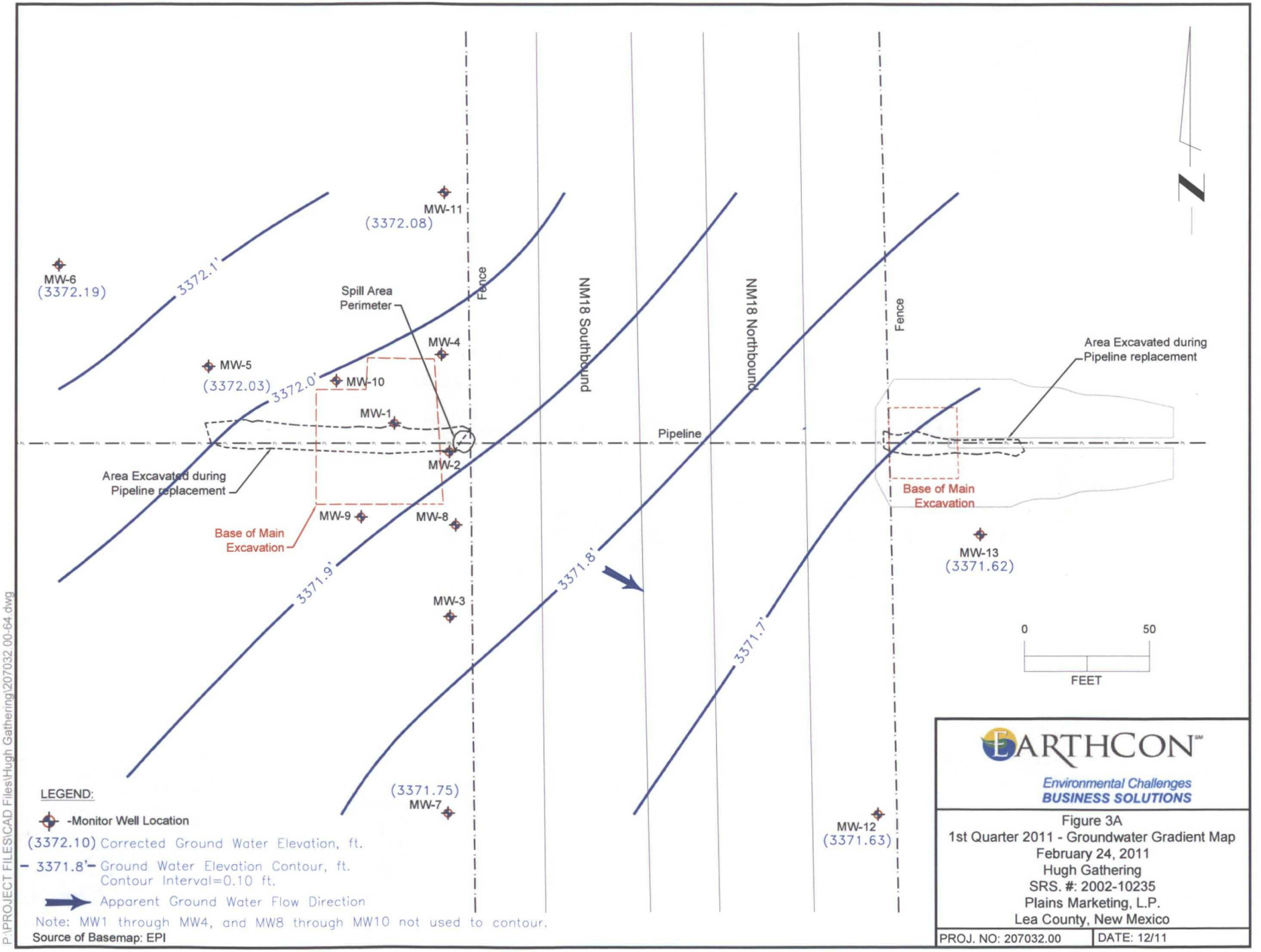
P:\PROJECT FILES\CAD Files\Hugh Gathering\207032.00-62.dwg

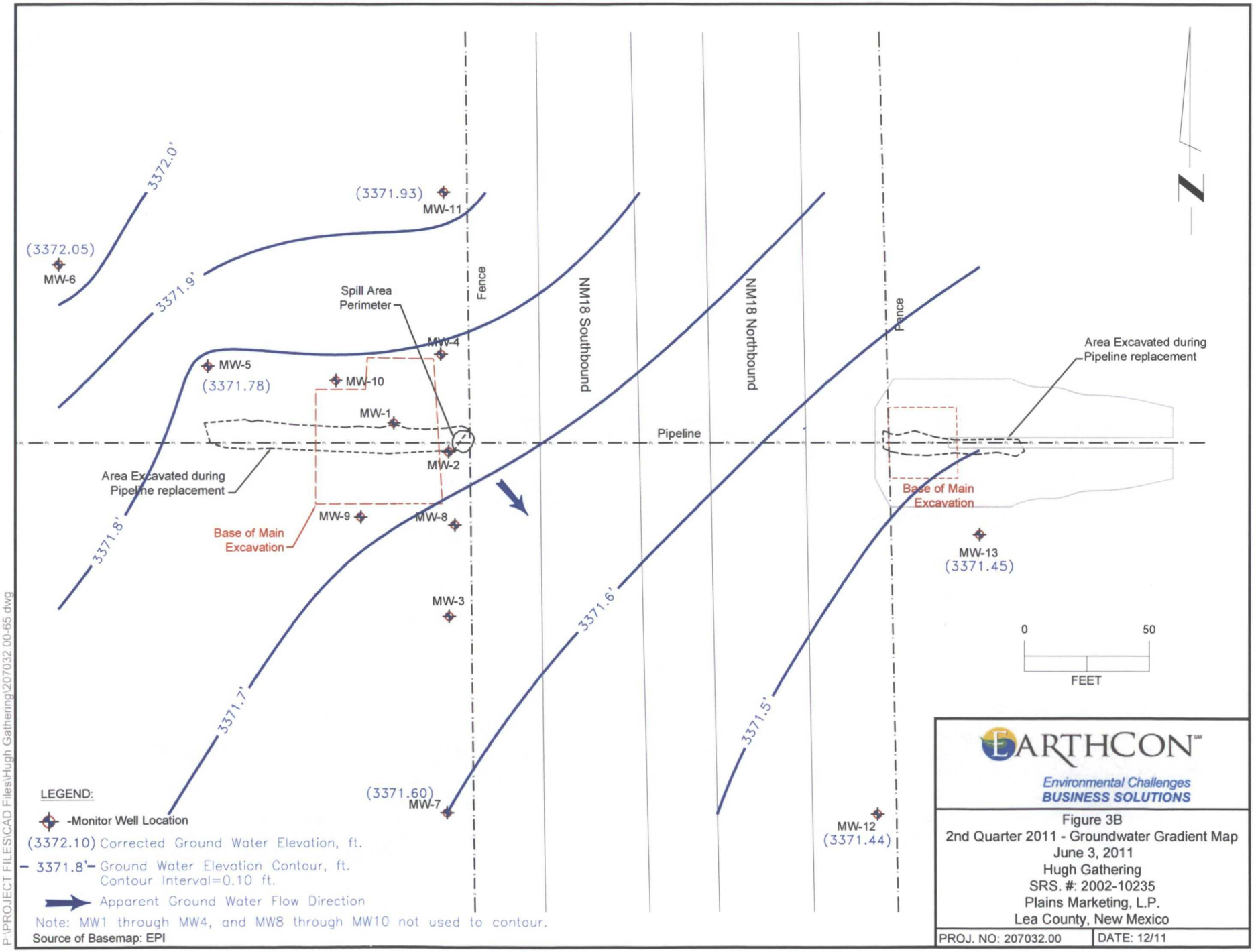
EARTHCON℠

Environmental Challenges
BUSINESS SOLUTIONS

Figure 2
Site Map
Hugh Gathering
SRS. #: 2002-10235
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 207032.00	DATE: 12/11


MW-11
(3372.08)
MW-6
(3372.19)
3372.1'
Spill Area
Perimeter
Fence
NM18 Southbound
NM18 Northbound
Fence
MW-4
MW-5
(3372.03)
3372.0'
MW-10
MW-1
Pipeline
MW-2
Area Excavated during
Pipeline replacement
Area Excavated during
Pipeline replacement
Base of Main
Excavation
MW-9
MW-8
Base of Main
Excavation
MW-13
(3371.62)
3371.9'
3371.8'
3371.7'
MW-3
0
50
FEET
(3371.75)
MW-7
MW-12
(3371.63)
LEGEND:
-Monitor Well Location
(3372.10) Corrected Ground Water Elevation, ft.
3371.8' Ground Water Elevation Contour, ft.
Contour Interval=0.10 ft.
Apparent Ground Water Flow Direction
Note: MW1 through MW4, and MW8 through MW10 not used to contour.
Source of Basemap: EPI
EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS
Figure 3A
1st Quarter 2011 - Groundwater Gradient Map
February 24, 2011
Hugh Gathering
SRS. #: 2002-10235
Plains Marketing, L.P.
Lea County, New Mexico
PROJ. NO: 207032.00
DATE: 12/11
P:\PROJECT FILES\CAD Files\Hugh Gathering\207032 00-64.dwg



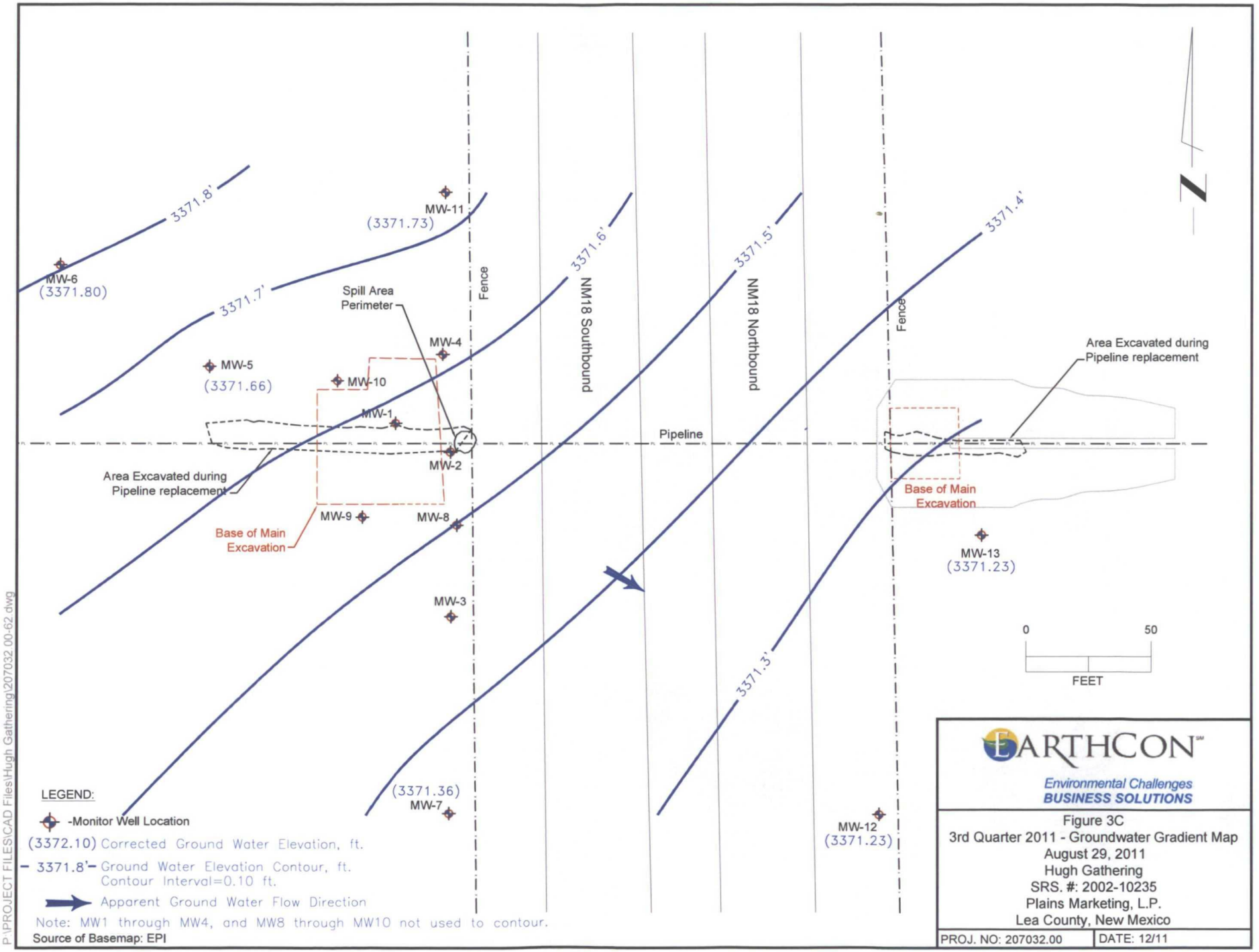
P:\PROJECT FILES\CAD Files\Hugh Gathering\207032 00-65.dwg

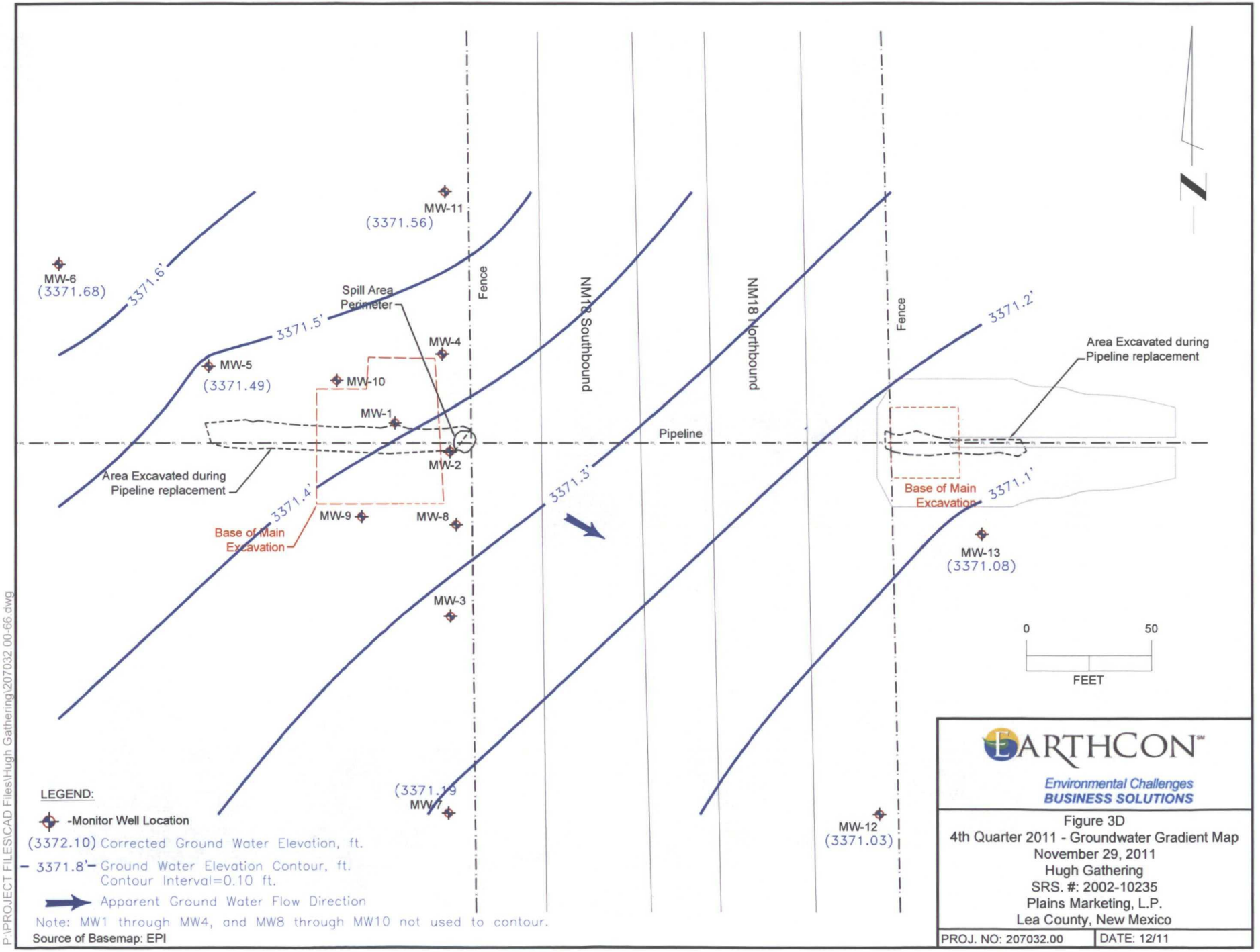
EARTHCON℠

Environmental Challenges
BUSINESS SOLUTIONS

Figure 3B
2nd Quarter 2011 - Groundwater Gradient Map
June 3, 2011
Hugh Gathering
SRS. #: 2002-10235
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 207032.00	DATE: 12/11


3371.8'
3371.7'
3371.6'
3371.5'
3371.4'
3371.3'
MW-11
(3371.73)
MW-6
(3371.80)
MW-5
(3371.66)
MW-4
MW-10
MW-1
MW-2
MW-9
MW-8
MW-3
(3371.36)
MW-7
MW-12
(3371.23)
MW-13
(3371.23)
Spill Area
Perimeter
Fence
NM18 Southbound
NM18 Northbound
Fence
Pipeline
Area Excavated during
Pipeline replacement
Base of Main
Excavation
Area Excavated during
Pipeline replacement
Base of Main
Excavation
0
50
FEET
LEGEND:
-Monitor Well Location
(3372.10) Corrected Ground Water Elevation, ft.
3371.8' Ground Water Elevation Contour, ft.
Contour Interval=0.10 ft.
Apparent Ground Water Flow Direction
Note: MW1 through MW4, and MW8 through MW10 not used to contour.
Source of Basemap: EPI
EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS
Figure 3C
3rd Quarter 2011 - Groundwater Gradient Map
August 29, 2011
Hugh Gathering
SRS. #: 2002-10235
Plains Marketing, L.P.
Lea County, New Mexico
PROJ. NO: 207032.00
DATE: 12/11
P:\PROJECT FILES\CAD Files\Hugh Gathering\207032.00-62.dwg



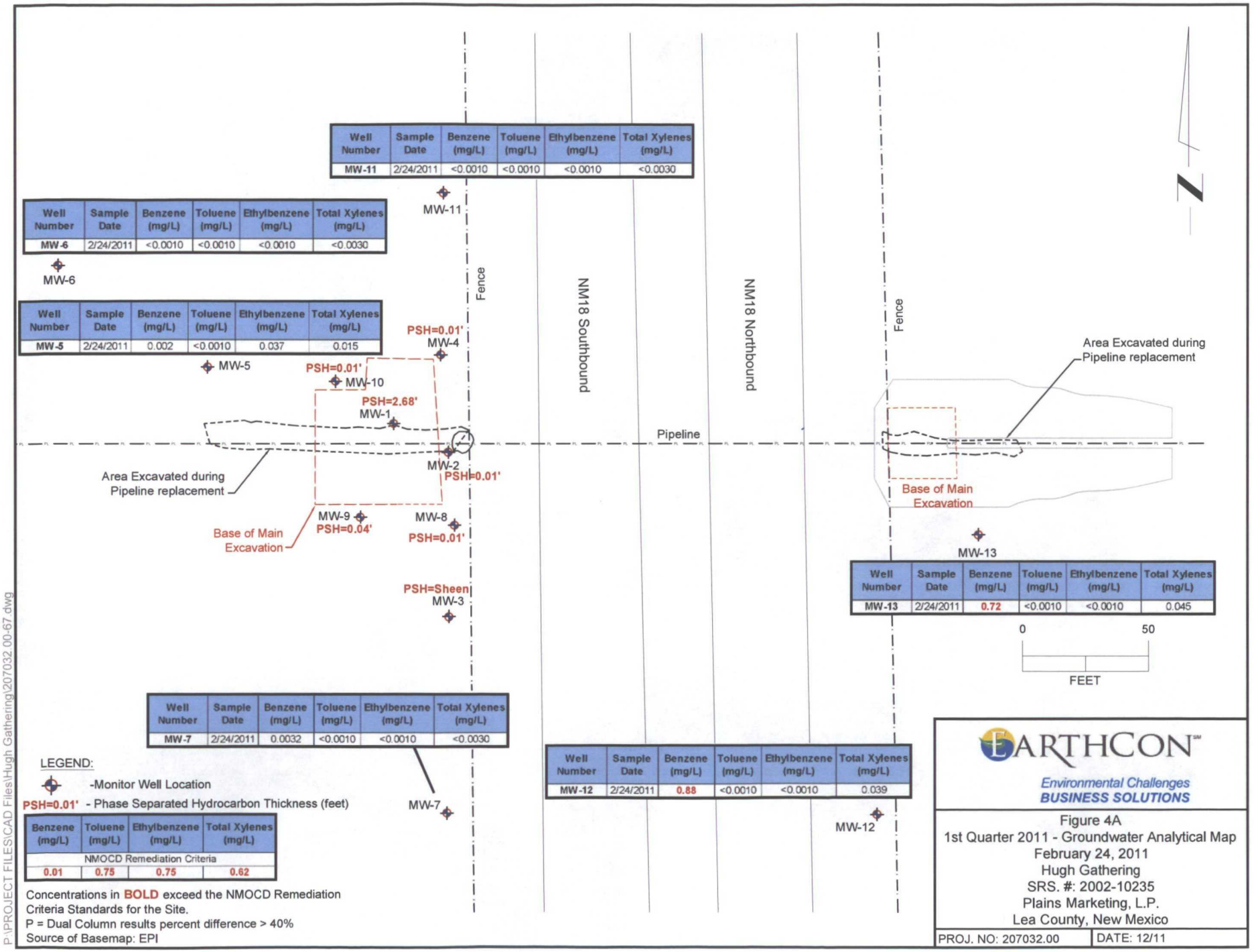
P:\PROJECT FILES\CAD Files\Hugh Gathering\207032 00-66.dwg

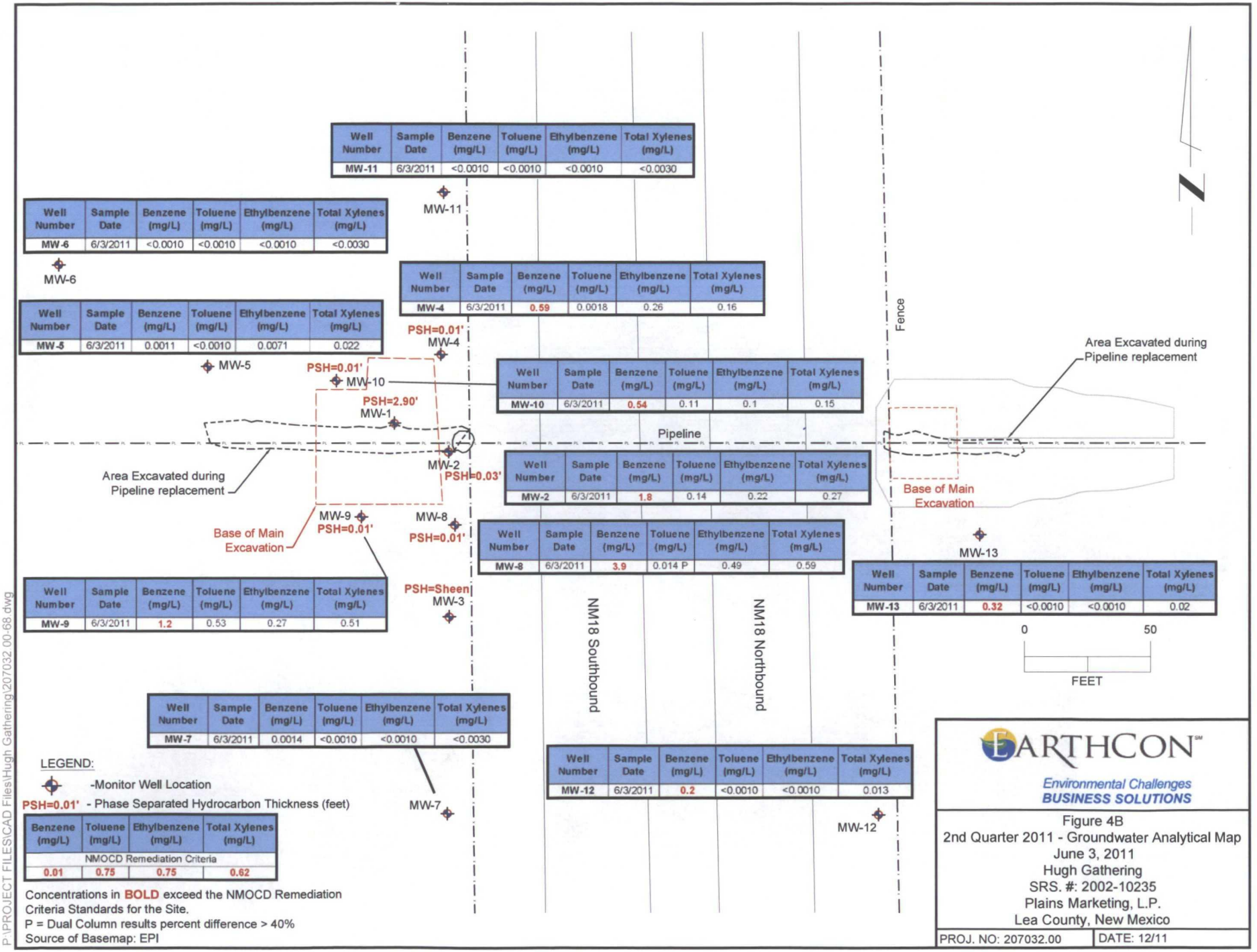
EARTHCON℠

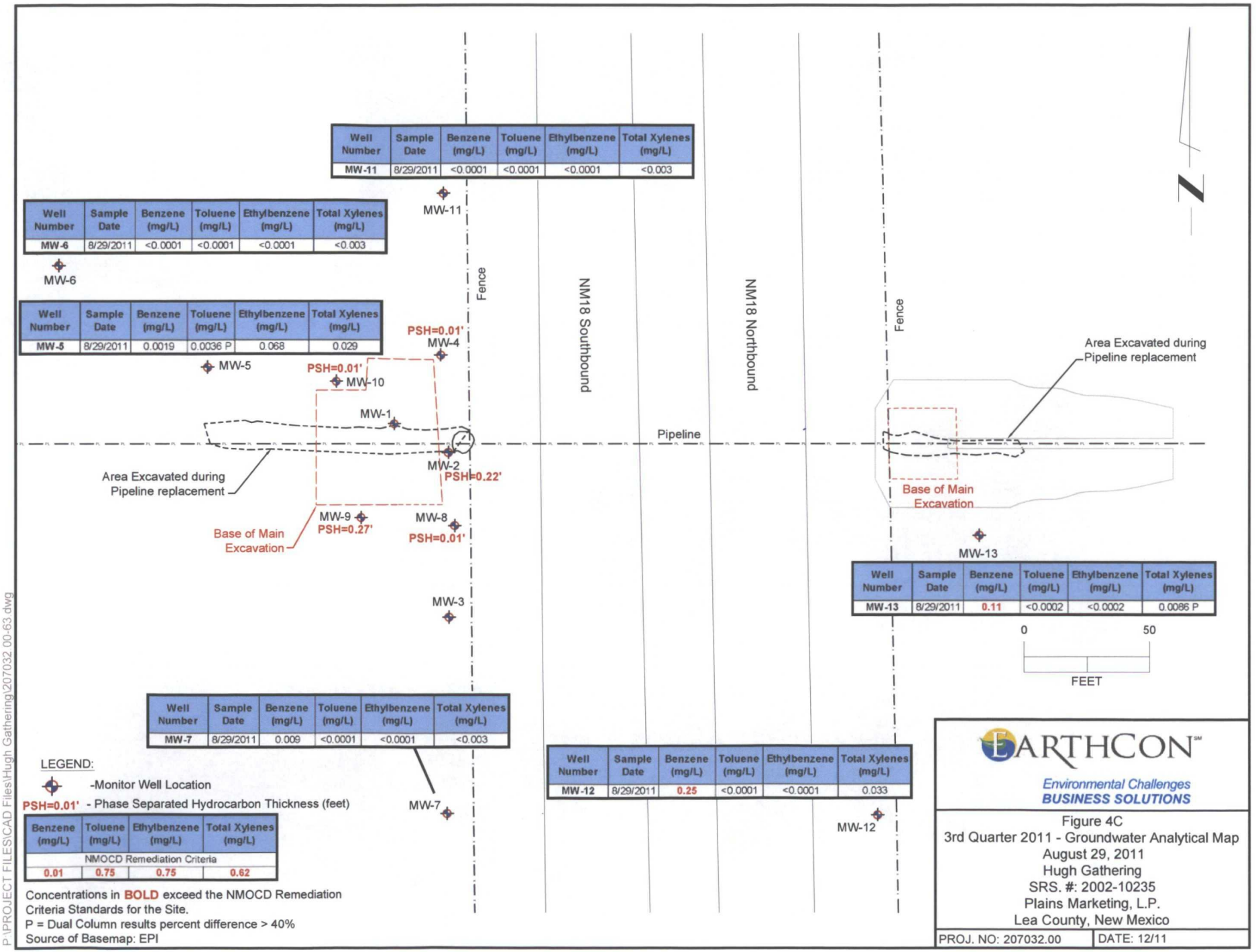
Environmental Challenges
BUSINESS SOLUTIONS

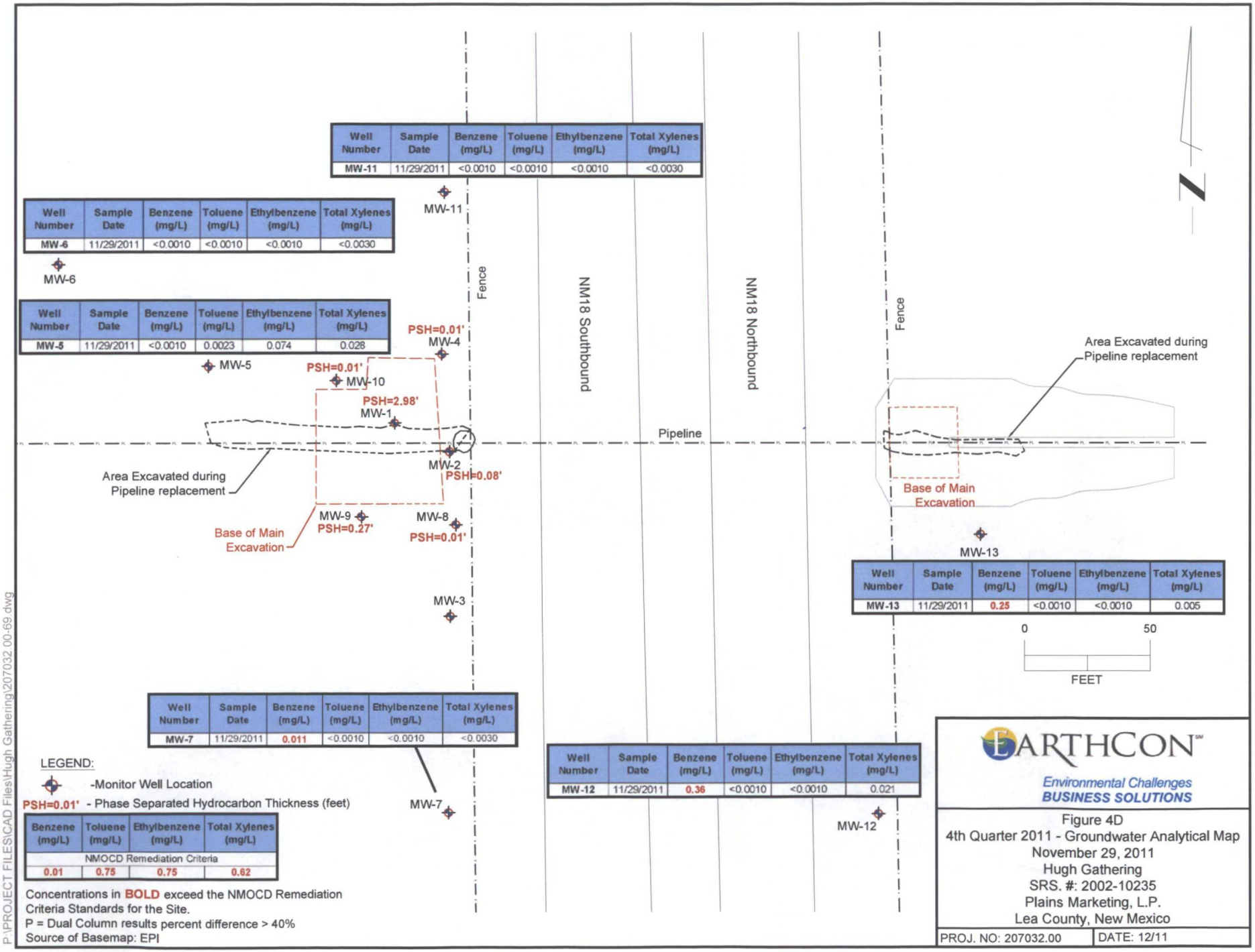
Figure 3D
4th Quarter 2011 - Groundwater Gradient Map
November 29, 2011
Hugh Gathering
SRS. #: 2002-10235
Plains Marketing, L.P.
Lea County, New Mexico

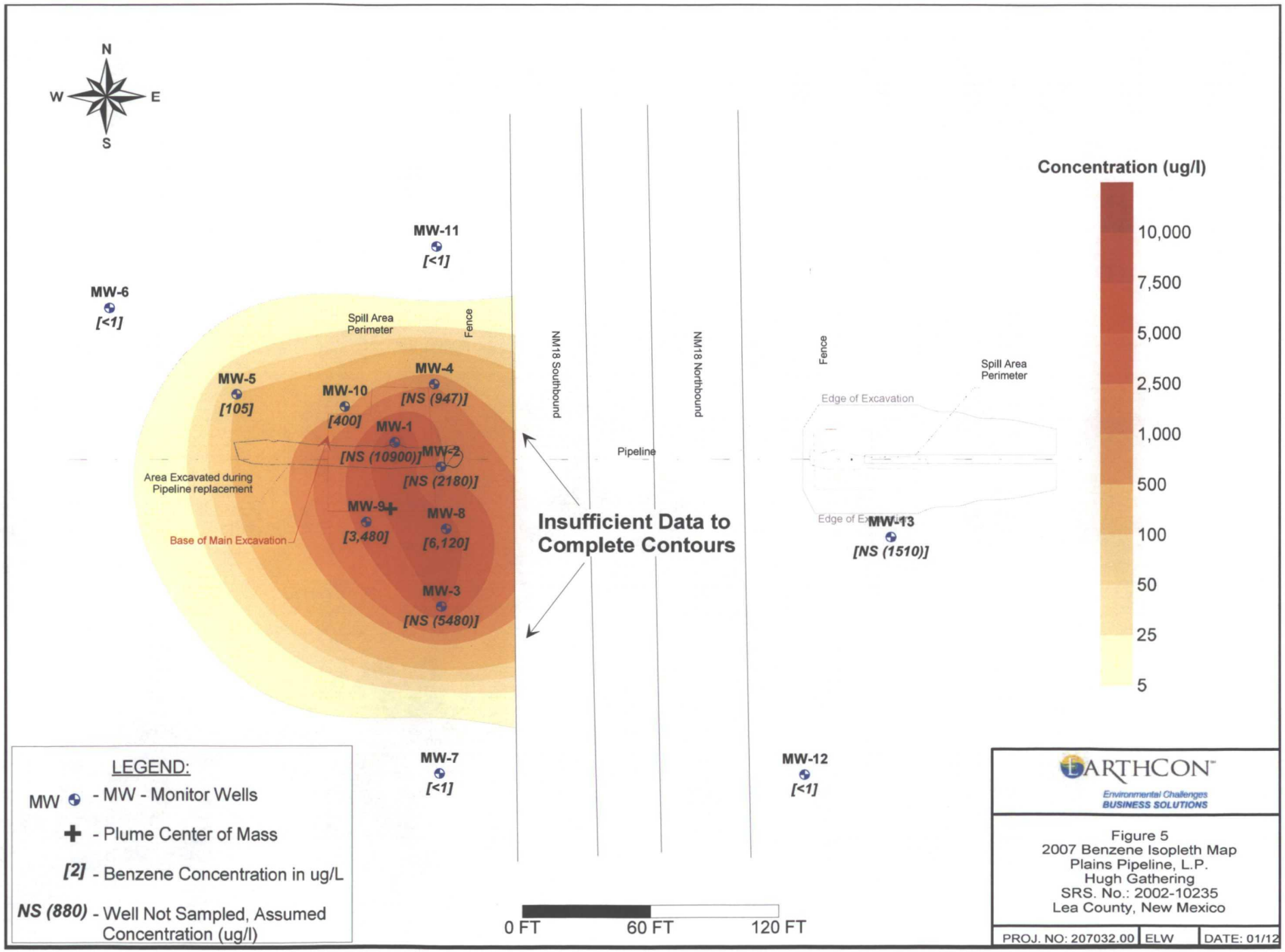
PROJ. NO: 207032.00	DATE: 12/11


Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-11 | 2/24/2011 | <0.0010 | <0.0010 | <0.0010 | <0.0030
MW-11
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-6
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-5 | 2/24/2011 | 0.002 | <0.0010 | 0.037 | 0.015
MW-5
PSH=0.01'
MW-4
PSH=0.01'
MW-10
PSH=2.68'
MW-1
MW-2
PSH=0.01'
Fence
NM18 Southbound
NM18 Northbound
Fence
Pipeline
Area Excavated during Pipeline replacement
Base of Main Excavation
MW-9
PSH=0.04'
MW-8
PSH=0.01'
PSH=Sheen
MW-3
Area Excavated during Pipeline replacement
Base of Main Excavation
MW-13
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-13 | 2/24/2011 | 0.72 | <0.0010 | <0.0010 | 0.045
0
50
FEET
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-7 | 2/24/2011 | 0.0032 | <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-12 | 2/24/2011 | 0.88 | <0.0010 | <0.0010 | 0.039
MW-12
LEGEND:
-Monitor Well Location
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.
P = Dual Column results percent difference > 40%
Source of Basemap: EPI
EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS
Figure 4A
1st Quarter 2011 - Groundwater Analytical Map
February 24, 2011
Hugh Gathering
SRS. #: 2002-10235
Plains Marketing, L.P.
Lea County, New Mexico
PROJ. NO: 207032.00
DATE: 12/11
P:\PROJECT FILES\CAD Files\Hugh Gathering\207032.00-67.dwg


MW-11
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-11 | 6/3/2011 | <0.0010 | <0.0010 | <0.0010 | <0.0030
MW-6
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-6 | 6/3/2011 | <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 | 6/3/2011 | 0.59 | 0.0018 | 0.26 | 0.16
PSH=0.01'
MW-5
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-5 | 6/3/2011 | 0.0011 | <0.0010 | 0.0071 | 0.022
PSH=0.01'
MW-10
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-10 | 6/3/2011 | 0.54 | 0.11 | 0.1 | 0.15
PSH=2.90'
MW-1
Pipeline
Fence
Area Excavated during Pipeline replacement
MW-2
PSH=0.03'
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-2 | 6/3/2011 | 1.8 | 0.14 | 0.22 | 0.27
Area Excavated during Pipeline replacement
Base of Main Excavation
MW-9
PSH=0.01'
MW-8
PSH=0.01'
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-8 | 6/3/2011 | 3.9 | 0.014 P | 0.49 | 0.59
Base of Main Excavation
MW-13
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-13 | 6/3/2011 | 0.32 | <0.0010 | <0.0010 | 0.02
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-9 | 6/3/2011 | 1.2 | 0.53 | 0.27 | 0.51
PSH=Sheen
MW-3
NM18 Southbound
NM18 Northbound
0
50
FEET
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-7 | 6/3/2011 | 0.0014 | <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-12 | 6/3/2011 | 0.2 | <0.0010 | <0.0010 | 0.013
MW-12
LEGEND:
-Monitor Well Location
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.
P = Dual Column results percent difference > 40%
Source of Basemap: EPI
EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS
Figure 4B
2nd Quarter 2011 - Groundwater Analytical Map
June 3, 2011
Hugh Gathering
SRS. #: 2002-10235
Plains Marketing, L.P.
Lea County, New Mexico
PROJ. NO: 207032.00
DATE: 12/11
P:\PROJECT FILES\CAD Files\Hugh Gathering\207032 00-68 dwg


Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-11 | 8/29/2011 | <0.0001 | <0.0001 | <0.0001 | <0.003
MW-11
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-6
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-5 | 8/29/2011 | 0.0019 | 0.0036 P | 0.068 | 0.029
MW-5
PSH=0.01'
MW-4
PSH=0.01'
MW-10
MW-1
Fence
NM18 Southbound
NM18 Northbound
Fence
Pipeline
Area Excavated during Pipeline replacement
MW-2
PSH=0.22'
Area Excavated during Pipeline replacement
Base of Main Excavation
MW-9
PSH=0.27'
MW-8
PSH=0.01'
Base of Main Excavation
MW-13
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-13 | 8/29/2011 | 0.11 | <0.0002 | <0.0002 | 0.0086 P
MW-3
0
50
FEET
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-7 | 8/29/2011 | 0.009 | <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-12 | 8/29/2011 | 0.25 | <0.0001 | <0.0001 | 0.033
MW-12
LEGEND:
-Monitor Well Location
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.
P = Dual Column results percent difference > 40%
Source of Basemap: EPI
EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS
Figure 4C
3rd Quarter 2011 - Groundwater Analytical Map
August 29, 2011
Hugh Gathering
SRS. #: 2002-10235
Plains Marketing, L.P.
Lea County, New Mexico
PROJ. NO: 207032.00
DATE: 12/11
P:\PROJECT FILES\CAD Files\Hugh Gathering\207032 00-63.dwg

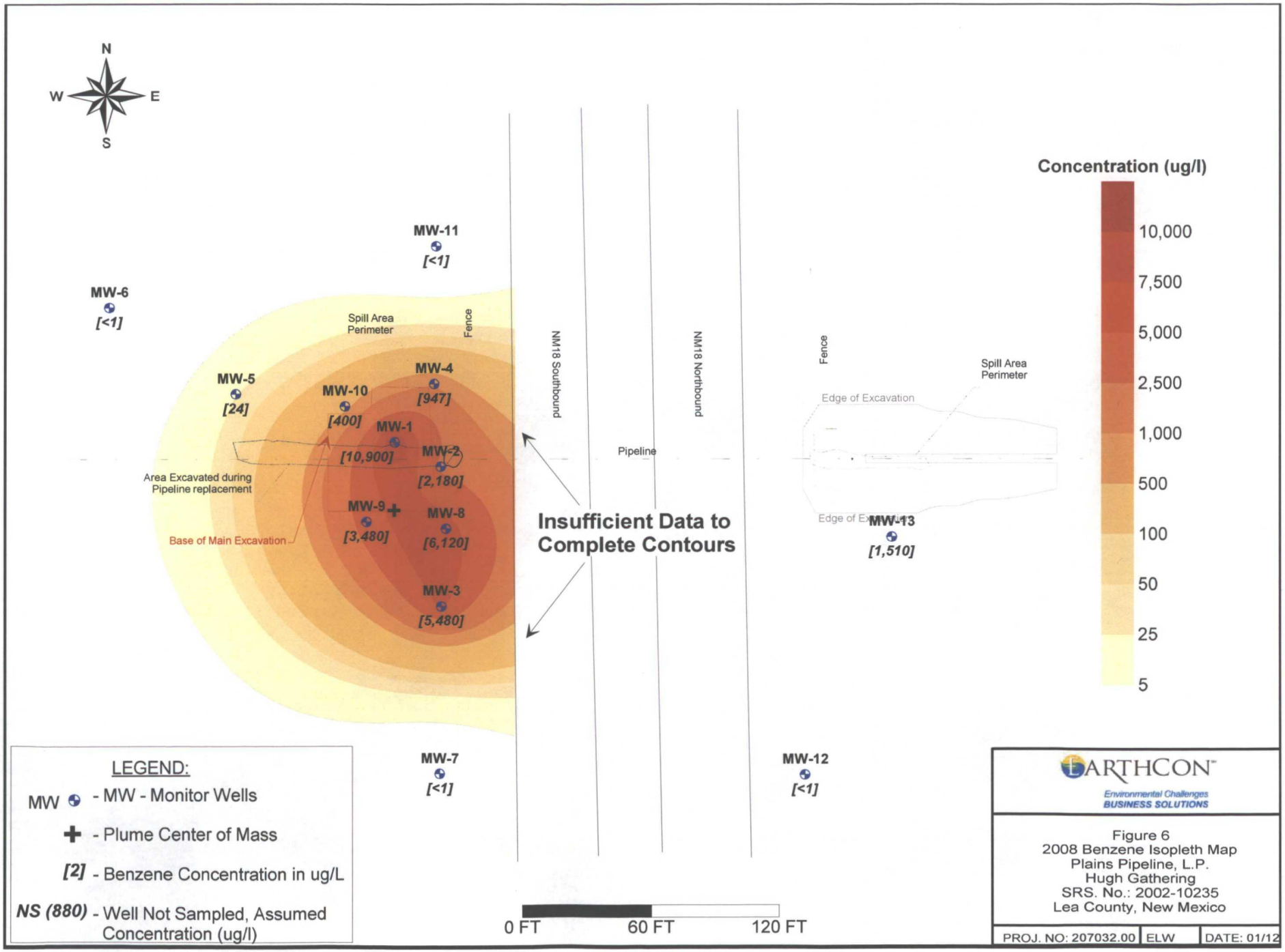

Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-11 | 11/29/2011 | <0.0010 | <0.0010 | <0.0010 | <0.0030
MW-11
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-6 | 11/29/2011 | <0.0010 | <0.0010 | <0.0010 | <0.0030
MW-6
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-5 | 11/29/2011 | <0.0010 | 0.0023 | 0.074 | 0.028
MW-5
PSH=0.01'
MW-4
PSH=0.01'
MW-10
PSH=2.98'
MW-1
MW-2
PSH=0.08'
Fence
NM18 Southbound
NM18 Northbound
Fence
Pipeline
Area Excavated during Pipeline replacement
Area Excavated during Pipeline replacement
Base of Main Excavation
MW-9
PSH=0.27'
MW-8
PSH=0.01'
Base of Main Excavation
MW-3
MW-13
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-13 | 11/29/2011 | 0.25 | <0.0010 | <0.0010 | 0.005
0
50
FEET
Well Number | Sample Date | Benzene (mg/L) | Toluene (mg/L) | Ethylbenzene (mg/L) | Total Xylenes (mg/L)
MW-7 | 11/29/2011 | 0.011 | <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-12 | 11/29/2011 | 0.36 | <0.0010 | <0.0010 | 0.021
MW-12
LEGEND:
-Monitor Well Location
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.
P = Dual Column results percent difference > 40%
Source of Basemap: EPI
EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS
Figure 4D
4th Quarter 2011 - Groundwater Analytical Map
November 29, 2011
Hugh Gathering
SRS. #: 2002-10235
Plains Marketing, L.P.
Lea County, New Mexico
PROJ. NO: 207032.00
DATE: 12/11
P:\PROJECT FILES\CAD Files\Hugh Gathering\207032 00-69 dwg



EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS

Figure 5
2007 Benzene Isopleth Map
Plains Pipeline, L.P.
Hugh Gathering
SRS. No.: 2002-10235
Lea County, New Mexico

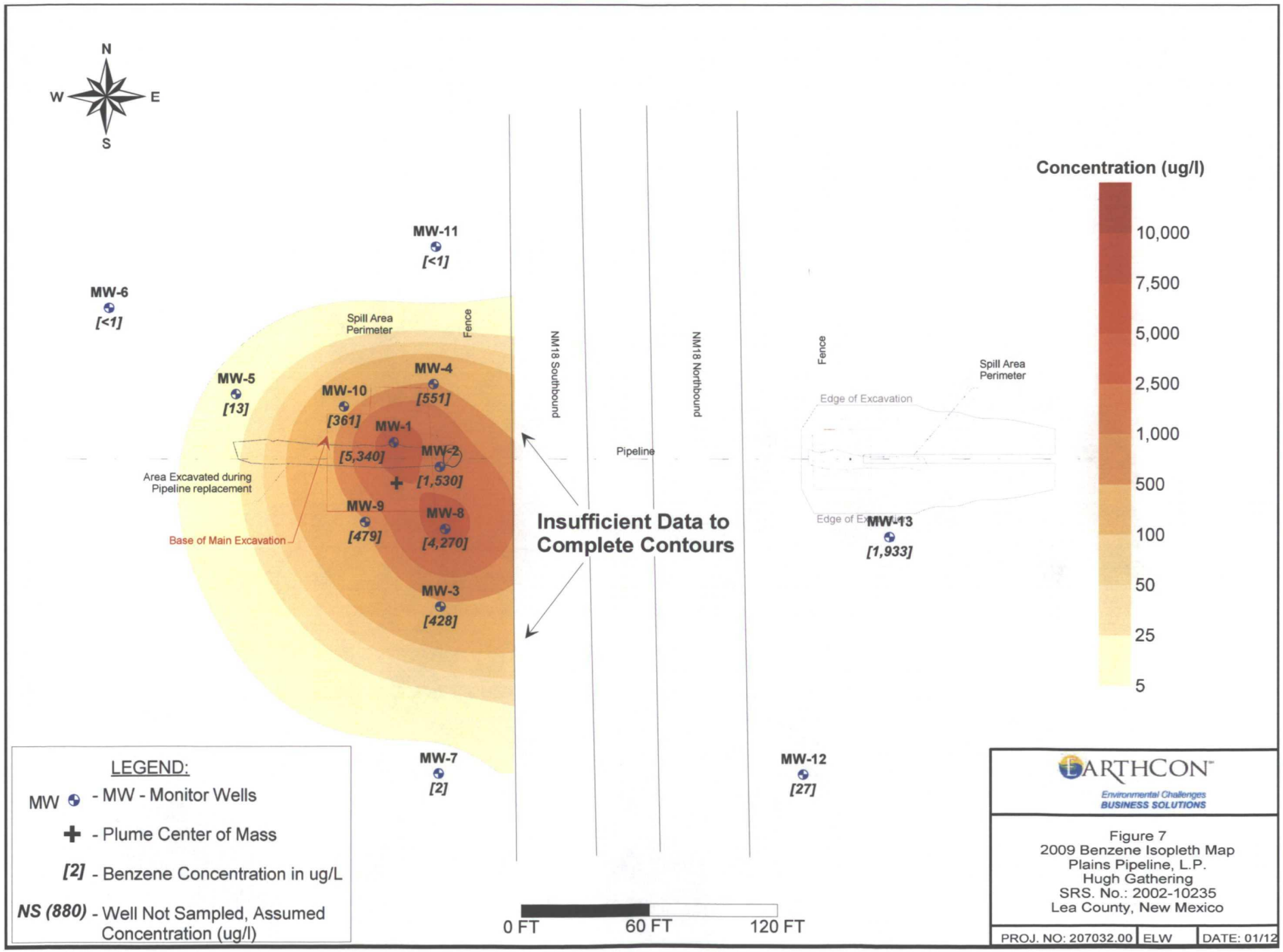
PROJ. NO: 207032.00	ELW	DATE: 01/12

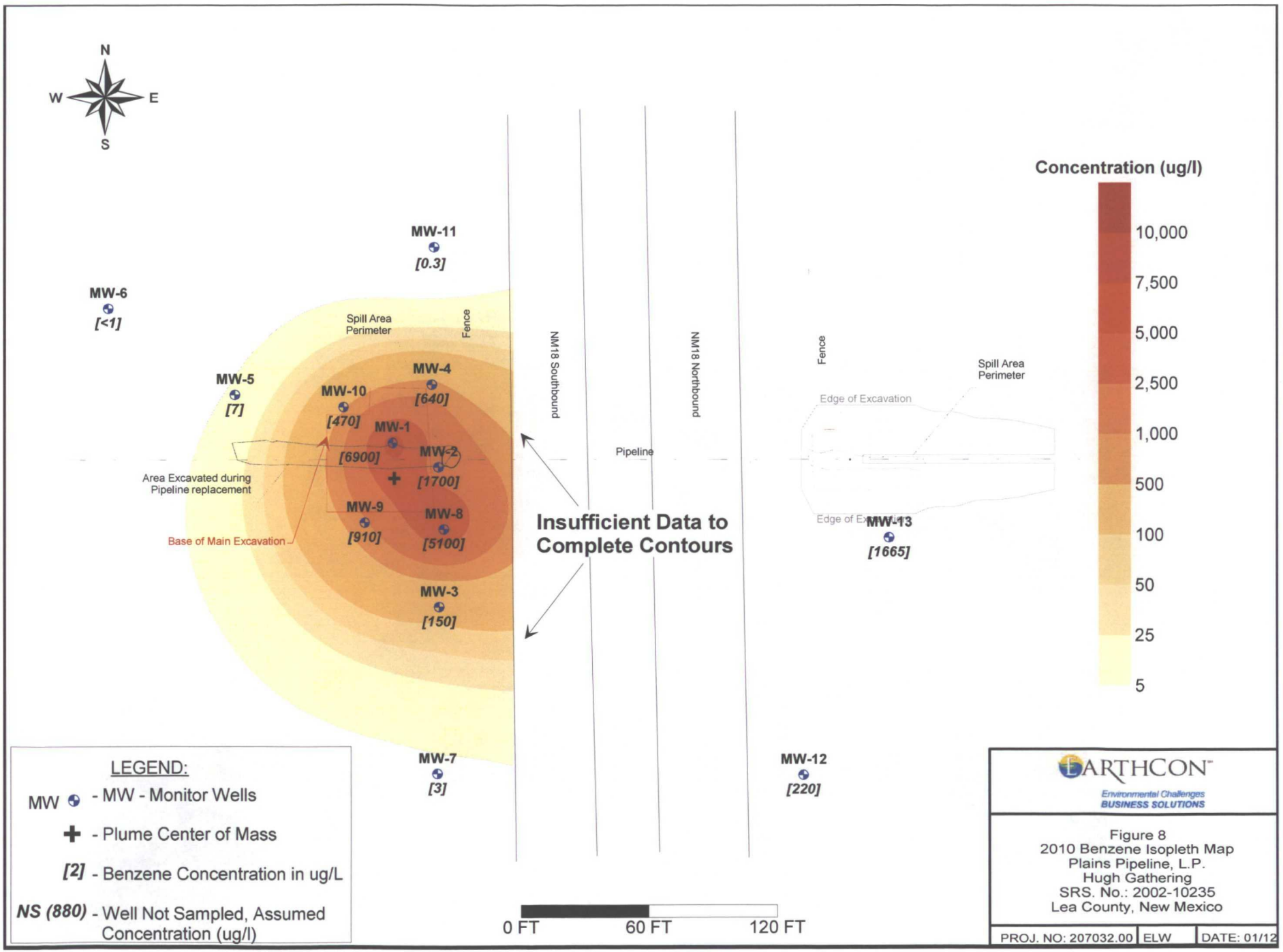


EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS

Figure 6
2008 Benzene Isopleth Map
Plains Pipeline, L.P.
Hugh Gathering
SRS. No.: 2002-10235
Lea County, New Mexico

PROJ. NO: 207032.00	ELW	DATE: 01/12

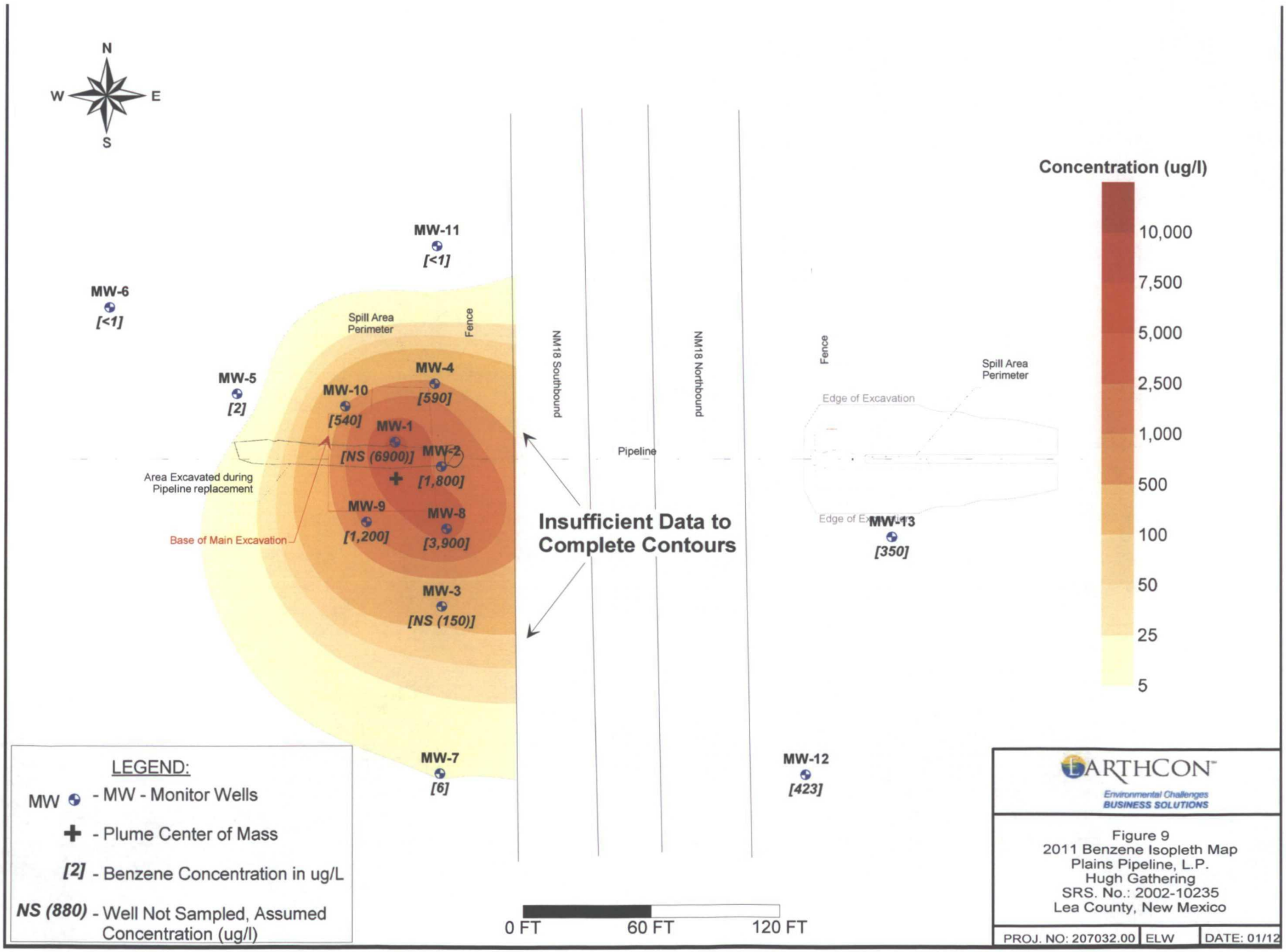

N
W
E
S
Concentration (ug/l)
10,000
7,500
5,000
2,500
1,000
500
100
50
25
5
MW-11
[<1]
MW-6
[<1]
Spill Area Perimeter
Fence
MW-5
[13]
MW-10
[361]
MW-4
[551]
MW-1
[5,340]
MW-2
[1,530]
Area Excavated during Pipeline replacement
Base of Main Excavation
MW-9
[479]
MW-8
[4,270]
MW-3
[428]
MW-7
[2]
NM18 Southbound
NM18 Northbound
Pipeline
Insufficient Data to Complete Contours
Fence
Spill Area Perimeter
Edge of Excavation
MW-13
[1,933]
MW-12
[27]
LEGEND:
MW - MW - Monitor Wells
+ - Plume Center of Mass
[2] - Benzene Concentration in ug/L
NS (880) - Well Not Sampled, Assumed Concentration (ug/l)
0 FT
60 FT
120 FT
EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS
Figure 7
2009 Benzene Isopleth Map
Plains Pipeline, L.P.
Hugh Gathering
SRS. No.: 2002-10235
Lea County, New Mexico
PROJ. NO: 207032.00
ELW
DATE: 01/12



EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS

Figure 8
2010 Benzene Isopleth Map
Plains Pipeline, L.P.
Hugh Gathering
SRS. No.: 2002-10235
Lea County, New Mexico

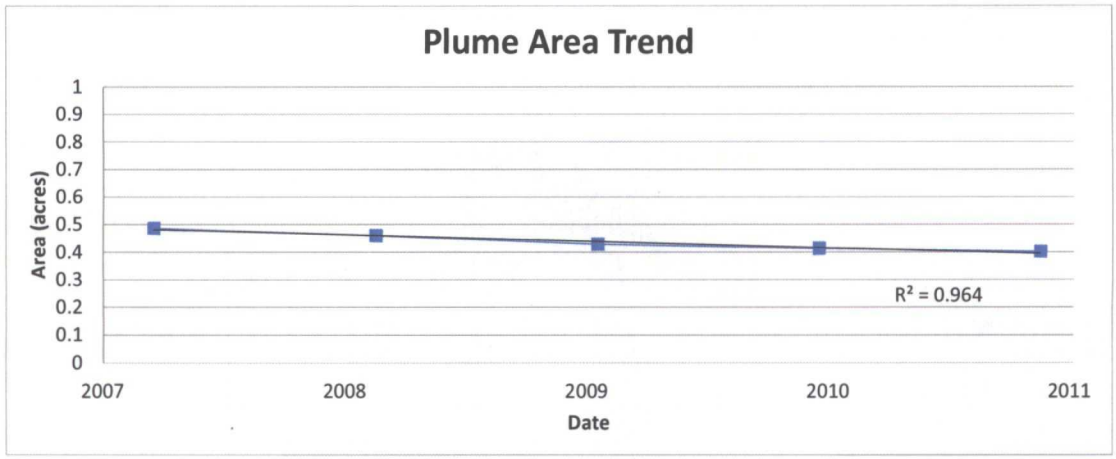
PROJ. NO: 207032.00 | ELW | DATE: 01/12

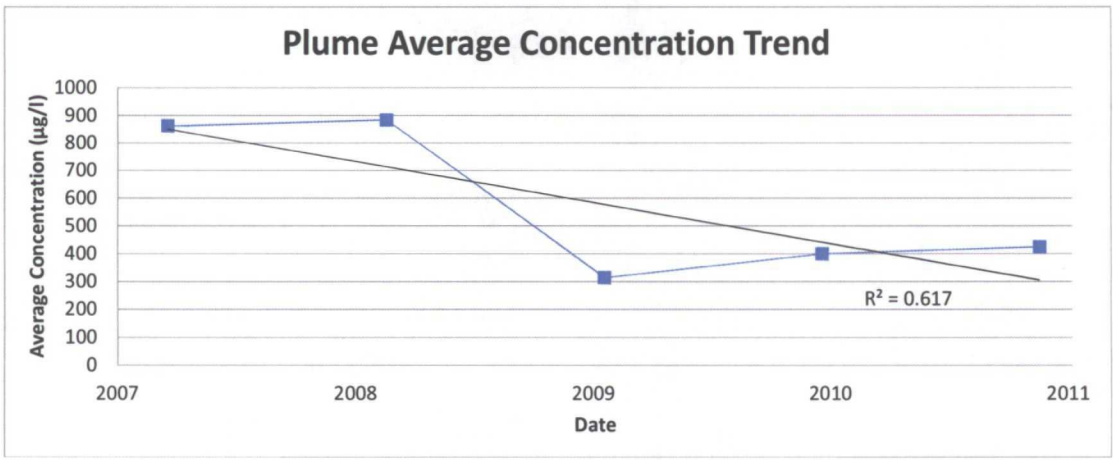


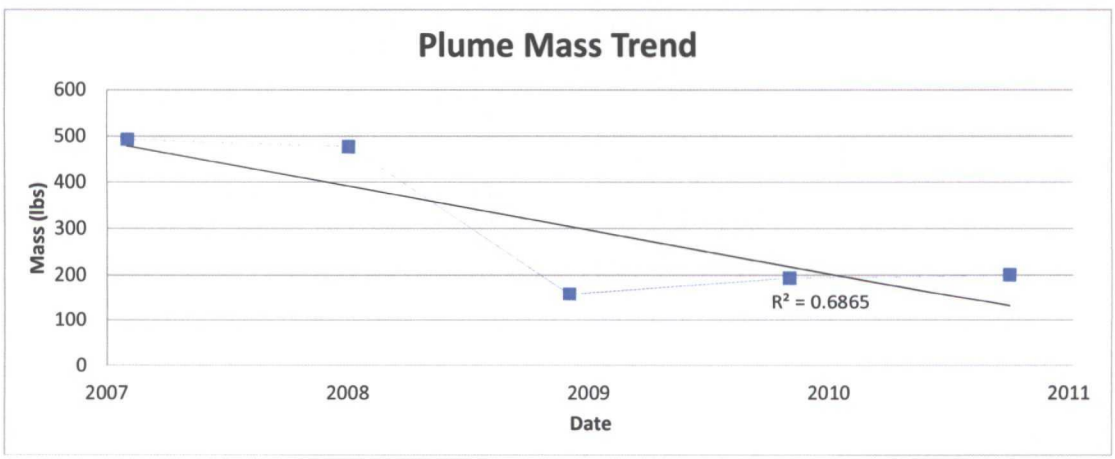
EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS

Figure 9
2011 Benzene Isopleth Map
Plains Pipeline, L.P.
Hugh Gathering
SRS. No.: 2002-10235
Lea County, New Mexico

PROJ. NO: 207032.00 | ELW | DATE: 01/12







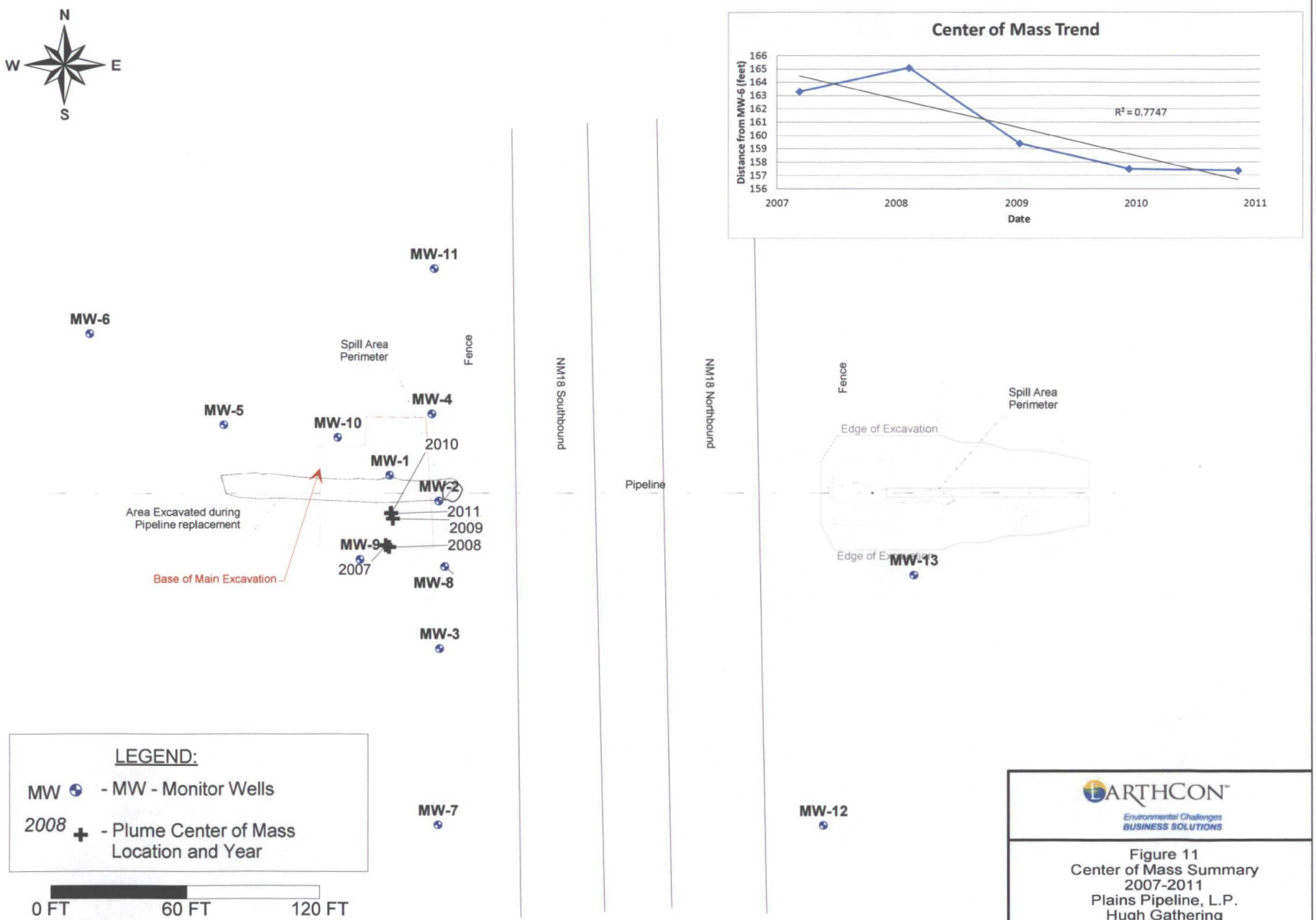
Summary of Plume Stability Characteristics

Date	Area (Acres)	Average Conc. (µg/l)	Mass (lbs)
2007	0.49	862	493
2008	0.46	884	477
2009	0.43	314	158
2010	0.41	399	194
2011	0.40	425	200

EARTHCON™
Environmental Challenges
BUSINESS SOLUTIONS

Figure 10
Benzene Plume Stability Analysis
Summary 2007 - 2011
Plains Pipeline, L.P.
Hugh Gathering
SRS. No.: 2002-10235
Lea County, New Mexico

PROJ. NO: 207032.00	DN: RP	DATE: 01/12



EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS

Figure 11
Center of Mass Summary
2007-2011
Plains Pipeline, L.P.
Hugh Gathering
SRS. No.: 2002-10235
Lea County, New Mexico

PROJ. NO: 207032.00	ELW	DATE: 01/12

TABLES

TABLE 1
2011 WELL SURVEY DATA AND GROUNDWATER ELEVATION
Plains Marketing, L.P.
SRS #2002-10235
Hugh Gathering
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)	Comments
								PSH	H_2O		
MW-1	02/24/11	3429.95	69.59	57.45	60.13	2.68	NA	5.00	5.00	3372.10	
MW-1	06/03/11	3429.95	69.59	57.65	60.55	2.90	NA	NA	NA	3371.87	
MW-1	08/29/11	3429.95	69.59	NG	NG	NG	NG	NG	NG	NG	
MW-1	11/29/11	3429.95	69.59	57.92	60.90	2.98	NA	NA	NA	3371.58	
MW-2	02/24/11	3429.97	71.75	57.95	57.96	0.01		0.00	20.00	3372.02	
MW-2	06/03/11	3429.97	71.75	58.17	58.20	0.03	NA	NA	NA	3371.80	Sampled
MW-2	08/29/11	3429.97	71.75	58.41	58.63	0.22		0.10	4.90	3371.53	
MW-2	11/29/11	3429.97	71.75	58.54	58.62	0.08	NA	NA	NA	3371.42	
MW-3	02/24/11	3429.89	65.55	ND	58.03	ND	NA	NA	NA	3371.86	
MW-3	06/03/11	3429.89	65.55	Sheen	58.27	Sheen	NA	NA	NA	3371.62	
MW-3	08/29/11	3429.89	65.55	Sheen	58.57	Sheen	NA	NA	NA	3371.32	
MW-3	11/29/11	3429.89	65.55	Sheen	58.67	Sheen	NA	NA	NA	3371.22	
MW-4	02/24/11	3430.36	71.90	58.36	58.37	0.01	NA	NA	NA	3372.00	
MW-4	06/03/11	3430.36	71.90	58.58	58.59	0.01	NA	NA	NA	3371.78	Sampled
MW-4	08/29/11	3430.36	71.90	58.85	58.86	0.01		0.10	4.90	3371.51	
MW-4	11/29/11	3430.36	71.90	58.97	58.98	0.01	NA	NA	NA	3371.39	
MW-5	02/24/11	3428.93	72.28	NA	56.90	NA	NA	NA	NA	3372.03	Sampled
MW-5	06/03/11	3428.93	72.28	NA	57.15	NA	NA	NA	NA	3371.78	Sampled
MW-5	08/29/11	3428.93	72.28	NA	57.27	NA	NA	NA	NA	3371.66	Sampled
MW-5	11/29/11	3428.93	72.28	NA	57.44	NA	NA	NA	NA	3371.49	Sampled
MW-6	02/24/11	3429.24	76.58	NA	57.05	NA	NA	NA	NA	3372.19	Sampled
MW-6	06/03/11	3429.24	76.58	NA	57.19	NA	NA	NA	NA	3372.05	Sampled
MW-6	08/29/11	3429.24	76.58	NA	57.44	NA	NA	NA	NA	3371.80	Sampled
MW-6	11/29/11	3429.24	76.58	NA	57.56	NA	NA	NA	NA	3371.68	Sampled
MW-7	02/24/11	3429.8	71.59	NA	58.05	NA	NA	NA	NA	3371.75	Sampled
MW-7	06/03/11	3429.8	71.59	NA	58.20	NA	NA	NA	NA	3371.60	Sampled

TABLE 1
2011 WELL SURVEY DATA AND GROUNDWATER ELEVATION
Plains Marketing, L.P.
SRS #2002-10235
Hugh Gathering
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)	Comments
								PSH	H_2O		
MW-7	08/29/11	3429.8	71.59	NA	58.44	NA	NA	NA	NA	3371.36	Sampled
MW-7	11/29/11	3429.8	71.59	NA	58.61	NA	NA	NA	NA	3371.19	Sampled
MW-8	02/24/11	3430.21	64.46	58.25	58.26	0.01	NA	NA	NA	3371.96	
MW-8	06/03/11	3430.21	64.46	58.47	58.48	0.01	NA	NA	NA	3371.74	Sampled
MW-8	08/29/11	3430.21	64.46	58.74	58.75	0.01	NA	NA	NA	3371.47	
MW-8	11/29/11	3430.21	64.46	58.85	58.86	0.01	NA	NA	NA	3371.36	
MW-9	02/24/11	3429.88	67.52	57.90	57.94	0.04	NA	0.25	9.75	3371.97	
MW-9	06/03/11	3429.88	67.52	58.13	58.14	0.01	NA	NA	NA	3371.75	Sampled
MW-9	08/29/11	3429.88	67.52	58.38	58.65	0.27	NA	0.10	4.90	3371.46	
MW-9	11/29/11	3429.88	67.52	58.47	58.74	0.27	NA	NA	NA	3371.37	
MW-10	02/24/11	3430.65	63.30	58.57	58.58	0.01	NA	NA	NA	3372.08	
MW-10	06/03/11	3430.65	63.30	58.79	58.80	0.01	NA	NA	NA	3371.86	Sampled
MW-10	08/29/11	3430.65	63.30	59.06	59.07	0.01	NA	NA	NA	3371.59	
MW-10	11/29/11	3430.65	63.30	59.17	59.18	0.01	NA	NA	NA	3371.48	
MW-11	02/24/11	3430.94	74.81	ND	58.86	ND	NA	NA	NA	3372.08	Sampled
MW-11	06/03/11	3430.94	74.81	ND	59.01	ND	NA	NA	NA	3371.93	Sampled
MW-11	08/29/11	3430.94	74.81	ND	59.21	ND	NA	NA	NA	3371.73	Sampled
MW-11	11/29/11	3430.94	74.81	ND	59.38	ND	NA	NA	NA	3371.56	Sampled
MW-12	02/24/11	3426.47	64.18	ND	54.84	ND	NA	NA	NA	3371.63	Sampled
MW-12	06/03/11	3426.47	64.18	ND	55.03	ND	NA	NA	NA	3371.44	Sampled
MW-12	08/29/11	3426.47	64.18	ND	55.24	ND	NA	NA	NA	3371.23	Sampled
MW-12	11/29/11	3426.47	64.18	ND	55.44	ND	NA	NA	NA	3371.03	Sampled
MW 13	02/24/11	3431.13	74.60	ND	59.51	ND	NA	NA	NA	3371.62	Sampled

TABLE 1
2011 WELL SURVEY DATA AND GROUNDWATER ELEVATION
Plains Marketing, L.P.
SRS #2002-10235
Hugh Gathering
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)	Comments
								PSH	H_2O		
MW 13	06/03/11	3431.13	74.60	ND	59.68	ND	NA	NA	NA	3371.45	Sampled
MW 13	08/29/11	3431.13	74.60	ND	59.90	ND	NA	NA	NA	3371.23	Sampled
MW 13	11/29/11	3431.13	74.60	ND	60.05	ND	NA	NA	NA	3371.08	Sampled

NA: Not Applicable
ND: Not Detected

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 #2002-10235
Hugh Gathering
Lea County, New Mexico

Well Number	Sample Date	Sample ID	SW 846-8021B			
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
			NMOCD Remediation Criteria			
			0.010	0.750	0.750	0.620
MW-2	06/03/11	1106138-01	**1.8**	0.14	0.22	0.27
MW-4	06/03/11	1106138-02	**0.59**	0.0018	0.26	0.16
MW 5	02/24/11	1102756-01	0.002	<0.0010	0.0370	0.015
MW 5	06/03/11	1106138-03	0.0011	<0.0010	0.0071	0.022
MW 5	08/29/11	1108994-01	0.0019	0.0036 P	0.068	0.029
MW 5	11/29/11	1111906-01	<0.0010	0.0023	0.074	0.028
MW 6	02/24/11	1102756-02	<0.0010	<0.0010	<0.0010	<0.0030
MW 6	06/03/11	1106138-04	<0.0010	<0.0010	<0.0010	<0.0030
MW 6	08/29/11	1108994-02	<0.0010	<0.0010	<0.0010	<0.0030
MW 6	11/29/11	1111906-02	<0.0010	<0.0010	<0.0010	<0.0030
MW 7	02/24/11	1102756-03	0.0032	<0.0010	<0.0010	<0.0030
MW 7	06/03/11	1106138-05	0.0014	<0.0010	<0.0010	<0.0030
MW 7	08/29/11	1108994-03	0.0090	<0.0010	<0.0010	<0.0030
MW 7	11/29/11	1111906-03	**0.0110**	<0.0010	<0.0010	<0.0030
MW-8	06/03/11	1106138-06	**3.9**	0.014 P	0.49	0.59
MW-9	06/03/11	1106138-07	**1.2**	0.53	0.27	0.51
MW-10	06/03/11	1106138-08	**0.54**	0.11	0.1	0.15
MW 11	02/24/11	1102756-04	<0.0010	<0.0010	<0.0010	<0.0030
MW 11	06/03/11	1106138-09	<0.0010	<0.0010	<0.0010	<0.0030
MW 11	08/29/11	1108994-04	<0.0010	<0.0010	<0.0010	<0.0030
MW 11	11/29/11	1111906-04	<0.0010	<0.0010	<0.0010	<0.0030
MW 12	02/24/11	1102756-05	**0.88**	<0.0010	<0.0010	0.039
MW 12	06/03/11	1106138-10	**0.20**	<0.0010	<0.0010	0.013
MW 12	08/29/11	1108994-05	**0.25**	<0.0010	<0.0010	0.033
MW 12	11/29/11	1111906-05	**0.36**	<0.0010	<0.0010	0.021
MW 13	02/24/11	1102756-06	**0.72**	<0.0010	<0.0010	0.045
MW 13	06/03/11	1106138-11	**0.32**	<0.0010	<0.0010	0.020
MW 13	08/29/11	1108994-06	**0.11**	<0.0010	<0.0010	0.0086 P
MW 13	11/29/11	1111906-06	**0.25**	<0.0010	<0.0010	0.005

Concentration in **Bold** = above NMOCD Criteria
P = Dual Column results percent difference > 40%

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS #2002-10235
Hugh Gathering
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			
				0.010	0.750	0.750	0.620
MW-2	06/03/11	1106138-01	NA	**1.8**	0.14	0.22	0.27
MW-4	06/03/11	1106138-02	NA	**0.59**	0.0018	0.26	0.16
MW 5	03/01/07	T16511-1	NA	**0.172**[a]	0.0062	0.1380	0.0900
MW 5	06/01/07	T17665-2	NA	**0.1210**	0.0101	0.1030	0.0608
MW 5	09/06/07	T18805-1	NA	**0.0477**	0.0113	0.0523	0.0335
MW 5	11/13/07	T19776-1	NA	**0.0775**	0.0285	0.0906	0.0531
MW 5	02/26/08	T21030-1	NA	0.00097 J	<0.00023	0.0031	<0.00055
MW 5	05/29/08	T22388-5	NA	**0.05730**	0.0134	0.0804	0.0625
MW 5	08/18/08	T23521-1	NA	**0.01010**	0.0039	0.0349	0.0194
MW 5	11/20/08	180223	NA	**0.0290**	0.00670	0.0827	0.0307
MW 5	02/18/09	187826	NA	**0.0256**	0.00220	0.1090	0.0403
MW 5	05/20/09	9052219	NA	**0.0131**	0.00150	0.0589	0.02430 [b]
MW 5	08/27/09	9083115	NA	0.0073	<0.000188	0.0452	0.01360
MW 5	11/17/09	215407	<0.000160	0.00600	0.000500 J	0.0408	0.0157
MW 5	02/11/10	222475	NA	0.00770	<0.000208	0.0596	0.0225
MW 5	05/12/10	1005465-05	NA	**0.013**	0.001700	0.0880	0.0420
MW 5	08/26/10	1008911-01	NA	0.0026	<0.00020	0.0340	0.011
MW 5	11/18/10	1011753-01	NA	0.0043	<0.0002	0.0570	0.021
MW 5	02/24/11	1102756-01	NA	0.002	<0.0010	0.0370	0.015
MW 5	06/03/11	1106138-03	NA	0.0011	<0.0010	0.0071	0.022
MW 5	08/29/11	1108994-01	NA	0.0019	0.0036 P	0.068	0.029
MW 5	11/29/11	1111906-01	NA	<0.0010	0.0023	0.074	0.028
MW 6	03/01/07	T16511-2	NA	<0.00035	<0.00020	<0.00033	<0.00036
MW 6	06/01/07	T17665-1	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW 6	09/06/07	T18805-2	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW 6	11/13/07	T19776-2	NA	<0.0005	<0.0005	<0.0005	<0.001
MW 6	02/26/08	T21030-2	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW 6	05/29/08	T22388-6	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW 6	08/18/08	T23521-2	NA	<0.0005	<0.0005	<0.0005	<0.001
MW 6	11/20/08	180224	NA	<0.00100	<0.00100	<0.00100	<0.00100
MW 6	02/18/09	187827	NA	<0.00100	<0.00100	0.0019	<0.00100
MW 6	05/20/09	9052219	NA	<0.000149	<0.000188	<0.000178	<0.000163
MW 6	08/27/09	9083115	NA	<0.000149	<0.000188	<0.000178	<0.000163
MW 6	11/17/09	215408	<0.000160	<0.000133	<0.000281	<0.000535	<0.000960
MW 6	02/11/10	222476	NA	<0.000208	<0.000208	<0.000303	<0.000326
MW 6	05/12/10	1005465-06	NA	<0.00020	<0.00020	0.00039 J	<0.00070
MW 6	08/26/10	1008911-02	NA	<0.00020	<0.00020	<0.00020	<0.00070
MW 6	11/18/10	1011753-02	NA	<0.00020	<0.00020	<0.00020	<0.00070
MW 6	02/24/11	1102756-02	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW 6	06/03/11	1106138-04	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW 6	08/29/11	1108994-02	NA	<0.0010	<0.0010	<0.0010	<0.0030

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS #2002-10235
Hugh Gathering
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			
				0.010	0.750	0.750	0.620
MW 6	11/29/11	1111906-02	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW 7	03/01/07	T16511-3	NA	<0.00035	<0.00020	<0.00033	<0.00036
MW 7	06/01/07	T17665-3	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW 7	09/06/07	T18805-3	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW 7	11/13/07	T19776-3	NA	<0.0005	<0.0005	<0.0005	<0.001
MW 7	02/26/08	T21030-3	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW 7	05/29/08	T22388-7	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW 7	08/18/08	T23521-3	NA	<0.0005	<0.0005	<0.0005	<0.001
MW 7	11/20/08	180225	NA	<0.00100	<0.00100	<0.00100	<0.00100
MW 7	02/18/09	187828	NA	<0.00100	<0.00100	<0.00100	<0.00100
MW 7	05/20/09	9052219	NA	<0.000149	<0.000188	<0.000178	<0.000163
MW 7	08/27/09	9083115	NA	0.0008 J	<0.000188	<0.000178	0.0014
MW 7	11/17/09	215409	<0.000160	0.0031	<0.000281	<0.000535	0.0039
MW 7	02/11/10	222477	NA	0.0026	<0.000208	<0.000303	0.0030
MW 7	05/12/10	1005465-07	NA	0.0030	<0.00020	<0.00020	0.0025 J
MW 7	08/26/10	1008911-03	NA	0.0052	<0.00020	<0.00020	0.0033
MW 7	11/18/10	1011753-03	NA	0.0020	<0.00020	<0.00020	<0.0007
MW 7	02/24/11	1102756-03	NA	0.0032	<0.0010	<0.0010	<0.0030
MW 7	06/03/11	1106138-05	NA	0.0014	<0.0010	<0.0010	<0.0030
MW 7	08/29/11	1108994-03	NA	0.0090	<0.0010	<0.0010	<0.0030
MW 7	11/29/11	1111906-03	NA	**0.0110**	<0.0010	<0.0010	<0.0030
MW-8	06/03/11	1106138-06	NA	**3.9**	0.014 P	0.49	0.59
MW-9	06/03/11	1106138-07	NA	**1.2**	0.53	0.27	0.51
MW-10	06/03/11	1106138-08	NA	**0.54**	0.11	0.1	0.15
MW 11	03/01/07	T16511-4	NA	<0.00035	<0.00020	<0.00033	<0.00036
MW 11	06/01/07	T17665-4	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW 11	09/06/07	T18805-4	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW 11	11/13/07	T19776-4	NA	<0.0005	<0.0005	<0.0005	<0.001
MW 11	02/26/08	T21030-4	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW 11	05/29/08	T22388-11	NA	<0.00021	0.0003 J	<0.00035	<0.00055
MW 11	08/18/08	T23521-4	NA	<0.0005	<0.0005	<0.0005	<0.001
MW 11	11/20/08	180226	NA	<0.00100	<0.00100	<0.00100	<0.00100
MW 11	02/18/09	187829	NA	<0.00100	<0.00100	<0.00100	<0.00100
MW 11	05/20/09	9052219	NA	<0.000149	<0.000188	<0.000178	<0.000163
MW 11	08/27/09	9083115	NA	<0.000149	<0.000188	<0.000178	<0.000163
MW 11	11/17/09	215410	<0.000160	<0.000133	<0.000281	<0.000535	<0.000960
MW 11	02/11/10	222478	NA	<0.000208	<0.000208	<0.000303	<0.000326
MW 11	05/12/10	1005465-11	NA	0.00027 J	<0.00020	<0.00020	<0.00070
MW 11	08/26/10	1008911-04	NA	<0.00020	<0.00020	<0.00020	<0.00070

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS #2002-10235
Hugh Gathering
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			
				0.010	0.750	0.750	0.620
MW 11	11/18/10	1011753-04	NA	<0.00020	<0.00020	<0.00020	<0.00070
MW 11	02/24/11	1102756-04	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW 11	06/03/11	1106138-09	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW 11	08/29/11	1108994-04	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW 11	11/29/11	1111906-04	NA	<0.0010	<0.0010	<0.0010	<0.0030
MW 12	03/01/07	T16511-5	NA	<0.00035	<0.00020	<0.00033	<0.00036
MW 12	06/01/07	T17665-5	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW 12	09/06/07	T18805-5	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW 12	11/13/07	T19776-5	NA	<0.0005	<0.0005	<0.0005	<0.001
MW 12	02/26/08	T21030-5	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW 12	05/29/08	T22388-12	NA	<0.00021	<0.00023	<0.00035	<0.00055
MW 12	08/18/08	T23521-5	NA	<0.0005	<0.0005	<0.0005	<0.001
MW 12	11/20/08	180227	NA	<0.00100	<0.00100	<0.00100	<0.00100
MW 12	02/18/09	187830	NA	<0.00100	<0.00100	<0.00100	<0.00100
MW 12	05/20/09	9052219	NA	**0.0171**	<0.000188	<0.000178	0.0019
MW 12	08/27/09	9083115	NA	**0.0281**	<0.00094	<0.00089	<0.000815
MW 12	11/17/09	215411	<0.000160	**0.0359**	<0.000281	<0.000535	<0.000960
MW 12	02/11/10	222479	NA	<0.000208	<0.000208	<0.000303	<0.000326
MW 12	05/12/10	1005465-12	NA	**0.48**	<0.00020	<0.00020	<0.00070
MW 12	08/26/10	1008911-05	NA	**0.23**	<0.00020	<0.00020	<0.00070
MW 12	11/18/10	1011753-05	NA	**0.17**	<0.00020	<0.00020	0.0060
MW 12	02/24/11	1102756-05	NA	**0.88**	<0.0010	<0.0010	0.039
MW 12	06/03/11	1106138-10	NA	**0.20**	<0.0010	<0.0010	0.013
MW 12	08/29/11	1108994-05	NA	**0.25**	<0.0010	<0.0010	0.033
MW 12	11/29/11	1111906-05	NA	**0.36**	<0.0010	<0.0010	0.021
MW 13	11/20/08	180228	NA	**1.51**	<0.0100	<0.0100	0.126
MW 13	02/18/09	187831	NA	**0.923**	<0.00100	<0.00100	0.0456
MW 13	05/20/09	9052219	NA	**1.56**	<0.00562	<0.0107	0.1190
MW 13	08/27/09	9083115	NA	**2.73**	<0.0166	<0.0115	0.1770
MW 13	11/17/09	215412	<0.0150	**2.52**	<0.00664	<0.00460	0.112
MW 13	02/11/10	222480	NA	**2.60**	<0.00400	<0.00430	0.099
MW 13	05/12/10	1005465-13	NA	**2.00**	0.00066 J	0.0010	0.075
MW 13	08/26/10	1008911-06	NA	**0.96**	<0.00020	<0.00020	0.069
MW 13	11/18/10	1011753-06	NA	**1.10**	<0.00020	<0.00020	0.0440
MW 13	02/24/11	1102756-06	NA	**0.72**	<0.0010	<0.0010	0.045
MW 13	06/03/11	1106138-11	NA	**0.32**	<0.0010	<0.0010	0.020

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS #2002-10235
Hugh Gathering
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			
				0.010	0.750	0.750	0.620
MW 13	08/29/11	1108994-06	NA	**0.11**	<0.0010	<0.0010	0.0086 P
MW 13	11/29/11	1111906-06	NA	**0.25**	<0.0010	<0.0010	0.005

[a] Result is from Run #2.
[b] Laboratory control spike recovery outside control limits. All reportable hits are considered to be an estimated Concentration in **Bold** = above NMOCD Criteria
J = Analyte detected below quantitation limit (Detected below MDL but above SDL.)
MDL = Method detection limit
SDL = Sample detection limit
P = Dual Column results percent difference > 40%
NA = Not Analyzed

TABLE 5
GROUNDWATER ANALYTICAL RESULTS FOR
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHs)
Plains Marketing, L.P.
SRS #2002-10235
Hugh Gathering
Lea County, New Mexico

Monitoring Well	Sample Date	Lab ID	Napthalene	Acenapthylene	Acenapthene	Flourene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo[a]-anthracene	Chrysene	Benzo[b]-fluoranthene	Benzo[j,k]-fluoranthene	Benzo[a]-pyrene	Indeno[1,2,3-cd]-pyrene	Dibenzofuran	Dibenz[a,h]-anthracene	Benzo[g,h,i]-perylene	1-Methylnaphthalene	2-Methylnaphthalene	Total Methylnaphthalene	TPH-GRO (C6-C10)	TPH (C10-C28)	TPH (C28-C35)
NMOCD Target Level 30 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)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
Other regulatory limits (Tap Water)*			***		365	243	1100	1830	1460	183	0.91	29.1	0.91	9.1	0.7**	0.91		0.091				***			
MW-1	3/2/2006	NA	NOT SAMPLED DUE TO PSH																						
MW-1	6/1/2007	NA	NOT SAMPLED DUE TO PSH																						
MW-1	5/25/2008	T22388-1	**2,920**	<81	<73	<100	862	<89	<81	<57	<71	<65	<74	<80	<78	<120		<63	<120		3830	**3830**	85.3	1570[a]	
MW-1	5/28/2009	9060112	**59.2**	<0.353	<0.654	5.72	9.45	<0.404	2.76	2.43	**2.13**	3.12	<0.315	<0.382	<0.253	<0.400	6.39	<0.279	<0.314	63	63.7	**126.7**	48.3	1290[b]	
MW-1	5/12/2010	1005465-01	**45**	1.2 J	2.8	4.2	9.7	<0.70	<0.70	<0.70	<0.70	1.4 J	<0.90	<1.0	<0.80	<1.0	6.7	<0.80	<0.90	62	64	**126**	190	310	58
MW-2	3/2/2006	NA	NOT SAMPLED DUE TO PSH																						
MW-2	6/1/2007	NA	NOT SAMPLED DUE TO PSH																						
MW-2	5/25/2008	T22388-2	**24.5**	<1.6	<1.5	<2.1	3.2 J	<1.8	<1.6	<1.1	<1.4	<1.3	<1.5	<1.6	<1.6	<2.4		<1.3	<2.5		19.1	**19.1**	11.6	8.43	
MW-2	5/27/2009	9060112	**25.4**	<0.0703	<0.130	0.713	2.15	<0.0803	<0.0875	<0.0456	<0.0301	<0.0908	<0.0627	<0.0761	<0.0503	<0.0797	2.11	<0.0555	<0.0624	23.6	21	**44.6**	7.74 J	<0.876	
MW-2	5/12/2010	1005465-02	**17**	0.14 J	0.14 J	0.76	1.4	<0.070	<0.070	<0.070	<0.070	<0.070	<0.090	<0.10	<0.080	<0.10	1.3	<0.080	<0.090	17	13	**30**	6.4	1.7	<0.19
MW-3	3/2/2006	NA	NOT SAMPLED DUE TO PSH																						
MW-3	6/1/2007	NA	NOT SAMPLED DUE TO PSH																						
MW-3	5/25/2008	T22388-3	17.3	<1.6	<1.5	<2.1	<1.6	<1.8	<1.6	<1.1	<1.4	<1.3	<1.5	<1.6	<1.6	<2.4		<1.3	<2.5		7.5	7.5	18.2	0.392	
MW-3	5/28/2009	9060112	<0.0676	<0.0710	<0.131	<0.0527	<0.0511	<0.0811	<0.0883	<0.0460	<0.0304	<0.0917	<0.0633	<0.0768	<0.0508	<0.0805	0.197	<0.0560	<0.0631	<0.0693	<0.0471	0	1.73 J	<0.876	
MW-3	5/12/2010	1005465-03	0.34	<0.070	<0.090	0.19 J	<0.22	<0.070	<0.070	<0.070	<0.070	<0.070	<0.090	<0.10	<0.080	<0.10	0.26	<0.080	<0.090	0.79	0.4	1.19	0.68	1.3	<0.20
MW-4	3/2/2006	NA	NOT SAMPLED DUE TO PSH																						
MW-4	6/1/2007	NA	NOT SAMPLED DUE TO PSH																						
MW-4	5/25/2008	T22388-4	**32.5**	<1.6	<1.5	<2.1	4.1 J	<1.8	<1.6	<1.1	<1.4	<1.3	<1.5	<1.6	<1.6	<2.4		<1.3	<2.5		29.6	**29.6**	7.62	25.1	
MW-4	5/27/2009	9060112	**89.3**	<0.352	<0.651	<0.261	12	<0.402	<0.438	<0.228	<0.150	<0.454	<0.314	<0.381	<0.252	<0.399	9.35	<0.278	<0.312	103[c]	89.4	**89.4**	5.01 J	9.14	
MW-4	5/12/2010	1005465-04	**59**	0.74	2.4	4.8	8	2.4	<0.070	<0.070	0.39	0.93	<0.090	<0.10	<0.080	<0.10	6.4	<0.080	<0.090	79	79	**158**	17	58	12
MW-5	3/2/2006	177440	7.08	<0.05	<0.05	0.060	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	<0.05						
MW-5	6/1/2007	T17665	2.7 J	<2.4	<2.3	<2.3	<2.7	<2.7	<2.9	<3.6	<3.6	<3.2	<2.8	<3.0	<3.0	<2.5		<2.9	<2.7						
MW-6	3/2/2006	177441	0.574	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	<0.05						
MW-6	6/1/2007	T17665	<1.6	<2.4	<2.3	<2.3	<2.7	<2.7	<2.9	<3.6	<3.6	<3.2	<2.8	<3.0	<3.0	<2.5		<2.9	<2.7						
MW-7	3/2/2006	177442	0.649	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	<0.05						
MW-7	6/1/2007	T17665	<1.6	<2.4	<2.3	<2.3	<2.7	<2.7	<2.9	<3.6	<3.6	<3.2	<2.8	<3.0	<3.0	<2.5		<2.9	<2.7						
MW-8	3/2/2006	NA	NOT SAMPLED DUE TO PSH																						

TABLE 5
GROUNDWATER ANALYTICAL RESULTS FOR
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHs)
Plains Marketing, L.P.
SRS #2002-10235
Hugh Gathering
Lea County, New Mexico

Monitoring Well	Sample Date	Lab ID	Napthalene	Acenaphthylene	Acenapthene	Flourene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo[a]-anthracene	Chrysene	Benzo[b]-fluoranthene	Benzo[j,k]-fluoranthene	Benzo[a]-pyrene	Indeno[1,2,3-cd]-pyrene	Dibenzofuran	Dibenz[a,h]-anthracene	Benzo[g,h,i]-perylene	1-Methylnaphthalene	2-Methylnaphthalene	Total Methylnaphthalene	TPH-GRO (C6-C10)	TPH (C10-C28)	TPH (C28-C35)
NMOCD Target Level 30 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)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
Other regulatory limits (Tap Water)*			***		365	243	1100	1830	1460	183	0.91	29.1	0.91	9.1	0.7**	0.91		0.091				***			
MW-8	6/1/2007	NA	NOT SAMPLED DUE TO PSH																						
MW-8	5/25/2008	T22388-8	**273**	<16.0	<15.0	<21.0	68.2	<18.0	<16.0	<11.0	<14.0	<13.0	<15.0	<16.0	<16.0	<24.0		<13.0	<25.0		512	**512**	26.1	157	
MW-8	5/27/2009	9060112	**68.5**	<0.353	<0.654	<0.262	7.05	<0.404	<0.440	<0.229	<0.151	<0.456	<0.315	<0.382	<0.253	<0.400	5.05	<0.279	<0.314	57.5	59.6	**117.1**	18.9	<0.876	
MW-8	5/12/2010	1005465-08	**40**	0.47	0.62	1.9	4.5	0.37	<0.070	<0.070	<0.070	0.67	<0.090	<0.10	<0.080	<0.10	3.3	<0.080	<0.090	35	39	**74**	26	23	5.3
MW-9	3/2/2006	NA	NOT SAMPLED DUE TO PSH																						
MW-9	6/1/2007	NA	NOT SAMPLED DUE TO PSH																						
MW-9	5/25/2008	T22388-9	**29**	<1.6	<1.5	<2.1	2.1 J	<1.8	<1.6	<1.1	<1.4	<1.3	<1.5	<1.6	<1.6	<2.4		<1.3	<2.5		18.3	**18.3**	20.3	24.8	
MW-9	5/27/2009	9060112	**31**	<0.353	<0.654	<0.262	5.09	<0.404	<0.440	<0.229	<0.151	<0.456	<0.315	<0.382	<0.253	<0.400	3.50	<0.279	<0.314	36.5	34.4	**70.9**	3.73	3.40 J	
MW-9	5/12/2010	1005465-09	7.4	0.15 J	0.36	0.73	1.9	0.18 J	<0.070	<0.070	<0.070	<0.070	<0.090	<0.10	<0.080	<0.10	1.30	<0.080	<0.090	9.9	8.4	18.3	13	15	2.3
MW-10	3/2/2006	NA	NOT SAMPLED DUE TO PSH																						
MW-10	6/1/2007	NA	NOT SAMPLED DUE TO PSH																						
MW-10	5/25/2008	T22388-10	5.3	<1.6	<1.5	<2.1	1.9 J	<1.8	<1.6	<1.1	<1.4	<1.3	<1.5	<1.6	<1.6	<2.4		<1.3	<2.5		6.2	6.2	2.17	7.62	
MW-10	5/27/2009	9060112	7.63	<0.0710	<0.131	<0.0527	1.51	<0.0811	<0.0883	<0.0460	<0.0304	<0.0917	<0.0633	<0.0768	<0.0508	<0.0805	1.14	<0.0560	<0.0631	8.49	7.67	16.16	2.12	<0.876	
MW-10	5/12/2010	1005465-10	0.68	<0.070	<0.090	0.13 J	0.34	<0.070	<0.070	<0.070	<0.070	<0.070	<0.090	<0.10	<0.080	<0.10	0.22	<0.080	<0.090	0.55	0.43	0.98	35	93	18
MW-11	3/2/2006	177443	0.577	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	<0.05						
MW-11	6/1/2007	T17665	<1.6	<2.4	<2.3	<2.3	<2.7	<2.7	<2.9	<3.6	<3.6	<3.2	<2.8	<3.0	<3.0	<2.5		<2.9	<2.7						
MW-12	3/2/2006	177461	0.548	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	<0.05						
MW-12	6/1/2007	T17665	<1.6	<2.4	<2.3	<2.3	<2.7	<2.7	<2.9	<3.6	<3.6	<3.2	<2.8	<3.0	<3.0	<2.5		<2.9	<2.7						
MW-13	12/7/2011	1112254-01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002						

Bold values exceed NMWQCC groundwater standards
All data prior to 2007 collected by EPI
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.)
MDL = Method detection limit
SDL = Sample detection limit
NA - Not Available
(a) Surrogate recovery outside control limits due to dilution.
(b) Surrogate recovery outside control limits due to peak interference (Well MW-1 contains measurable product thickness, the result may possibly be estimated concentration with a high bias)
(c) Estimated concentration value greater than the standard range

TABLE 6
2011 MONTHLY PSH AND DISSOLVED PHASE GROUNDWATER RECOVERY DATA
Plains Marketing, L.P.
SRS #2002-10235
Hugh Gathering
Lea County, New Mexico

Month	Volume of PSH recovered in gallons	Volume of dissolved phase groundwater recovered in gallons	Quarterly Volume of PSH volumes recovered	Quarterly Volume of dissolved phase groundwater recovered in gallons
January	13.70	161.30	33.35	511.65
February	14.25	150.75		
March	5.40	199.60		
April	1.10	138.90	8.75	434.25
May	3.35	206.65		
June	4.30	88.70		
July	1.00	71.00	3.00	204.00
August	1.00	69.00		
September	1.00	64.00		
October	6.90	153.10	13.35	316.65
November	2.80	77.20		
December	3.65	86.35		
Total	**58.45**	**1,466.55**	**58.45**	**1,466.55**

APPENDIX A

2011 Analytical Laboratory Reports

1st Quarter – Laboratory ID# 1102756

2nd Quarter – Laboratory ID# 1106138

3rd Quarter – Laboratory ID# 1108994

4th Quarter – Laboratory ID# 1111906

Chain of Custody Documentation

ALS Environmental

03-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: Hugh Gathering Work Order: **1102756**

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 16.

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: 03-Mar-11

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: **1102756**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1102756-01	MW-5	Water		2/24/2011 12:10	2/25/2011 10:15	☐
1102756-02	MW-6	Water		2/24/2011 12:05	2/25/2011 10:15	☐
1102756-03	MW-7	Water		2/24/2011 12:00	2/25/2011 10:15	☐
1102756-04	MW-11	Water		2/24/2011 11:55	2/25/2011 10:15	☐
1102756-05	MW-12	Water		2/24/2011 12:15	2/25/2011 10:15	☐
1102756-06	MW-13	Water		2/24/2011 12:25	2/25/2011 10:15	☐
1102756-07	Trip Blank	Water		2/24/2011	2/25/2011 10:15	☑

ALS Environmental

Date: *03-Mar-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: 1102756
Sample ID: MW-5
Lab ID: 1102756-01
Collection Date: 2/24/2011 12:10 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.0020**		**0.0010**	**mg/L**	1	3/2/2011 03:51 AM
Toluene	ND		0.0010	mg/L	1	3/2/2011 03:51 AM
Ethylbenzene	**0.037**		**0.0010**	**mg/L**	1	3/2/2011 03:51 AM
Xylenes, Total	**0.015**		**0.0030**	**mg/L**	1	3/2/2011 03:51 AM
Surr: 4-Bromofluorobenzene	*122*		*77-129*	*%REC*	1	3/2/2011 03:51 AM
Surr: Trifluorotoluene	*112*		*75-130*	*%REC*	1	3/2/2011 03:51 AM

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

ALS Environmental

Date: *03-Mar-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: 1102756
Sample ID: MW-6
Lab ID: 1102756-02
Collection Date: 2/24/2011 12:05 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	3/2/2011 04:09 AM
Toluene	ND		0.0010	mg/L	1	3/2/2011 04:09 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/2/2011 04:09 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/2/2011 04:09 AM
Surr: 4-Bromofluorobenzene	*102*		*77-129*	*%REC*	1	3/2/2011 04:09 AM
Surr: Trifluorotoluene	*101*		*75-130*	*%REC*	1	3/2/2011 04:09 AM

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

ALS Environmental

Date: *03-Mar-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: 1102756
Sample ID: MW-7
Lab ID: 1102756-03
Collection Date: 2/24/2011 12:00 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.0032**		**0.0010**	**mg/L**	1	3/2/2011 04:26 AM
Toluene	ND		0.0010	mg/L	1	3/2/2011 04:26 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/2/2011 04:26 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/2/2011 04:26 AM
Surr: 4-Bromofluorobenzene	*104*		*77-129*	*%REC*	1	3/2/2011 04:26 AM
Surr: Trifluorotoluene	*101*		*75-130*	*%REC*	1	3/2/2011 04:26 AM

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

ALS Environmental

Date: *03-Mar-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: 1102756
Sample ID: MW-11
Lab ID: 1102756-04
Collection Date: 2/24/2011 11:55 AM
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 04:43 AM
Toluene	ND		0.0010	mg/L	1	3/2/2011 04:43 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/2/2011 04:43 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/2/2011 04:43 AM
Surr: 4-Bromofluorobenzene	*103*		*77-129*	*%REC*	1	3/2/2011 04:43 AM
Surr: Trifluorotoluene	*101*		*75-130*	*%REC*	1	3/2/2011 04:43 AM

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

ALS Environmental

Date: *03-Mar-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Sample ID: MW-12
Collection Date: 2/24/2011 12:15 PM

Work Order: 1102756
Lab ID: 1102756-05
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.88**		**0.010**	**mg/L**	10	3/1/2011 06:08 PM
Toluene	ND		0.0010	mg/L	1	3/1/2011 10:33 PM
Ethylbenzene	ND		0.0010	mg/L	1	3/1/2011 10:33 PM
Xylenes, Total	**0.039**		**0.0030**	**mg/L**	1	3/1/2011 10:33 PM
Surr: 4-Bromofluorobenzene	*107*		*77-129*	*%REC*	1	3/1/2011 10:33 PM
Surr: 4-Bromofluorobenzene	*110*		*77-129*	*%REC*	10	3/1/2011 06:08 PM
Surr: Trifluorotoluene	*117*		*75-130*	*%REC*	1	3/1/2011 10:33 PM
Surr: Trifluorotoluene	*105*		*75-130*	*%REC*	10	3/1/2011 06:08 PM

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

ALS Environmental

Date: *03-Mar-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: 1102756
Sample ID: MW-13
Lab ID: 1102756-06
Collection Date: 2/24/2011 12:25 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.72**		**0.050**	**mg/L**	50	3/1/2011 06:25 PM
Toluene	ND		0.0010	mg/L	1	3/1/2011 10:51 PM
Ethylbenzene	ND		0.0010	mg/L	1	3/1/2011 10:51 PM
Xylenes, Total	**0.045**		**0.0030**	**mg/L**	1	3/1/2011 10:51 PM
Surr: 4-Bromofluorobenzene	*110*		*77-129*	*%REC*	1	3/1/2011 10:51 PM
Surr: 4-Bromofluorobenzene	*106*		*77-129*	*%REC*	50	3/1/2011 06:25 PM
Surr: Trifluorotoluene	*121*		*75-130*	*%REC*	1	3/1/2011 10:51 PM
Surr: Trifluorotoluene	*102*		*75-130*	*%REC*	50	3/1/2011 06:25 PM

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

ALS Environmental

Date: 03-Mar-11

Client: Premier Environmental Services

Work Order: 1102756

Project: Hugh Gathering

QC BATCH REPORT

Batch ID: **R106105** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **BBLKW1-030111-R106105** Units: **µg/L** Analysis Date: **3/1/2011 02:58 PM**

Client ID: Run ID: **BTEX1_110301B** SeqNo: **2295882** 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	*30.46*	1.0	*30*	0	*102*	*77-129*	0			
Surr: Trifluorotoluene	*30.13*	1.0	*30*	0	*100*	*75-130*	0			

LCS Sample ID: **BLCSW1-030111-R106105** Units: **µg/L** Analysis Date: **3/1/2011 02:23 PM**

Client ID: Run ID: **BTEX1_110301B** SeqNo: **2295881** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.66	1.0	20	0	103	77-126	0			
Toluene	21.48	1.0	20	0	107	80-124	0			
Ethylbenzene	21.91	1.0	20	0	110	76-125	0			
Xylenes, Total	63.8	3.0	60	0	106	79-124	0			
Surr: 4-Bromofluorobenzene	*32.88*	1.0	*30*	0	*110*	*77-129*	0			
Surr: Trifluorotoluene	*31.22*	1.0	*30*	0	*104*	*75-130*	0			

MS Sample ID: **1102707-01AMS** Units: **µg/L** Analysis Date: **3/1/2011 03:37 PM**

Client ID: Run ID: **BTEX1_110301B** SeqNo: **2295884** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.72	1.0	20	0	109	77-126	0			
Toluene	22.39	1.0	20	0	112	80-124	0			
Ethylbenzene	22.77	1.0	20	0	114	76-125	0			
Xylenes, Total	66.74	3.0	60	0	111	79-124	0			
Surr: 4-Bromofluorobenzene	*32.64*	1.0	*30*	0	*109*	*77-129*	0			
Surr: Trifluorotoluene	*31.25*	1.0	*30*	0	*104*	*75-130*	0			

MSD Sample ID: **1102707-01AMSD** Units: **µg/L** Analysis Date: **3/1/2011 03:54 PM**

Client ID: Run ID: **BTEX1_110301B** SeqNo: **2295885** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.41	1.0	20	0	107	77-126	21.72	1.44	20	
Toluene	22.36	1.0	20	0	112	80-124	22.39	0.169	20	
Ethylbenzene	22.81	1.0	20	0	114	76-125	22.77	0.173	20	
Xylenes, Total	66.96	3.0	60	0	112	79-124	66.74	0.333	20	
Surr: 4-Bromofluorobenzene	*32.98*	1.0	*30*	0	*110*	*77-129*	32.64	*1.04*	*20*	
Surr: Trifluorotoluene	*31.25*	1.0	*30*	0	*104*	*75-130*	31.25	*0.0103*	*20*	

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

Client: Premier Environmental Services
Work Order: 1102756
Project: Hugh Gathering

QC BATCH REPORT

Batch ID: **R106105** Instrument ID **BTEX1** Method: **SW8021B**

The following samples were analyzed in this batch: 1102756-05A 1102756-06A

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

Client: Premier Environmental Services
Work Order: 1102756
Project: Hugh Gathering

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: 1102756
Project: Hugh Gathering

QC BATCH REPORT

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

The following samples were analyzed in this batch:

1102756-01A	1102756-02A	1102756-03A
1102756-04A		

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

Client: Premier Environmental Services
Project: Hugh Gathering
WorkOrder: **1102756**

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

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

Page 1 of 1

ALS Project Manager: | ALS Work Order #: 1102750

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hugh Gathering	A	BTEX (8021)
Work Order		Project Number	207032	B	
Company Name	Premier Environmental Services	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	MW5	2-24-11	1210	GW	HCL	3	X										
2	MW6	↓	1205	↓	↓	↓	↓										
3	MW7		1200														
4	MW11		1155														
5	MW12		1215														
6	MW13	↓	1225	↓	↓	↓	↓										
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Matt Grubbs Shane 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	17:30	FEDEX
Relinquished by:	Date:	Time:	Received by (Laboratory): 2/25/11 10:15
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: **1102756** 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):	2.0c	002	
Cooler(s)/Kit(s):	3915		
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: 2-25-11 Time:

Name:

Company:

Seal Broken By:

Date: 2/25/11

1102756

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

to 2/26/11 FedEx Tracking Number 874763320394

ider's me Paul Bruce Phone

Company Pioneer

Address 20 W. Industrial Loop E
Dept./Floor/Suite/Room

Midland State TX ZIP 79701

ur Internal Billing Reference 207032

ALS Environmental

14-Jun-2011

Kathleen Buxton
Premier Environmental Services
4800 Sugar Grove Blvd.
Suite 390
Houston, TX 77477

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

Re: Hugh Gathering

Work Order: **1106138**

Dear Kathleen,

ALS Environmental received 12 samples on 04-Jun-2011 08:30 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 26.

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: 14-Jun-11

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: **1106138**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1106138-01	MW 2	Water		6/3/2011 14:45	6/4/2011 08:30	☐
1106138-02	MW 4	Water		6/3/2011 15:10	6/4/2011 08:30	☐
1106138-03	MW 5	Water		6/3/2011 13:47	6/4/2011 08:30	☐
1106138-04	MW 6	Water		6/3/2011 11:20	6/4/2011 08:30	☐
1106138-05	MW 7	Water		6/3/2011 10:05	6/4/2011 08:30	☐
1106138-06	MW 8	Water		6/3/2011 13:35	6/4/2011 08:30	☐
1106138-07	MW 9	Water		6/3/2011 14:20	6/4/2011 08:30	☐
1106138-08	MW 10	Water		6/3/2011 14:10	6/4/2011 08:30	☐
1106138-09	MW 11	Water		6/3/2011 14:00	6/4/2011 08:30	☐
1106138-10	MW 12	Water		6/3/2011 16:00	6/4/2011 08:30	☐
1106138-11	MW 13	Water		6/3/2011 15:35	6/4/2011 08:30	☐
1106138-12	Trip Blank	Water		6/3/2011	6/4/2011 08:30	☐

Client:	Premier Environmental Services
Project:	Hugh Gathering
Work Order:	1106138

Case Narrative

The result for toluene is flagged with P for sample MW 8 due to possible coelution or matrix interference on one of the two GC columns. The lower of the two results was reported as required by Method 8021B.

Batch R111332 BTEX: MS/MSD is for an unrelated sample.

ALS Environmental

Date: *14-Jun-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: 1106138
Sample ID: MW 2
Lab ID: 1106138-01
Collection Date: 6/3/2011 02:45 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**1.8**		**0.025**	**mg/L**	25	6/14/2011 01:25 AM
Toluene	**0.14**		**0.025**	**mg/L**	25	6/14/2011 01:25 AM
Ethylbenzene	**0.22**		**0.025**	**mg/L**	25	6/14/2011 01:25 AM
Xylenes, Total	**0.27**		**0.075**	**mg/L**	25	6/14/2011 01:25 AM
Surr: 4-Bromofluorobenzene	*111*		*77-129*	*%REC*	25	6/14/2011 01:25 AM
Surr: Trifluorotoluene	*104*		*75-130*	*%REC*	25	6/14/2011 01:25 AM

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

ALS Environmental

Date: *14-Jun-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: 1106138
Sample ID: MW 4
Lab ID: 1106138-02
Collection Date: 6/3/2011 03:10 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.59**		**0.010**	**mg/L**	10	6/14/2011 02:24 AM
Toluene	**0.0018**		**0.0010**	**mg/L**	1	6/13/2011 11:45 PM
Ethylbenzene	**0.26**		**0.010**	**mg/L**	10	6/14/2011 02:24 AM
Xylenes, Total	**0.16**		**0.0030**	**mg/L**	1	6/13/2011 11:45 PM
Surr: 4-Bromofluorobenzene	*119*		*77-129*	*%REC*	10	6/14/2011 02:24 AM
Surr: 4-Bromofluorobenzene	*109*		*77-129*	*%REC*	1	6/13/2011 11:45 PM
Surr: Trifluorotoluene	*103*		*75-130*	*%REC*	10	6/14/2011 02:24 AM
Surr: Trifluorotoluene	*123*		*75-130*	*%REC*	1	6/13/2011 11:45 PM

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

ALS Environmental

Date: *14-Jun-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Sample ID: MW 5
Collection Date: 6/3/2011 01:47 PM

Work Order: 1106138
Lab ID: 1106138-03
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.0011**		**0.0010**	**mg/L**	1	6/8/2011 01:32 AM
Toluene	ND		0.0010	mg/L	1	6/8/2011 01:32 AM
Ethylbenzene	**0.0071**		**0.0010**	**mg/L**	1	6/8/2011 01:32 AM
Xylenes, Total	**0.022**		**0.0030**	**mg/L**	1	6/8/2011 01:32 AM
Surr: 4-Bromofluorobenzene	*96.1*		*77-129*	*%REC*	1	6/8/2011 01:32 AM
Surr: Trifluorotoluene	*121*		*75-130*	*%REC*	1	6/8/2011 01:32 AM

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

ALS Environmental

Date: *14-Jun-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: 1106138
Sample ID: MW 6
Lab ID: 1106138-04
Collection Date: 6/3/2011 11:20 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	6/8/2011 09:34 AM
Toluene	ND		0.0010	mg/L	1	6/8/2011 09:34 AM
Ethylbenzene	ND		0.0010	mg/L	1	6/8/2011 09:34 AM
Xylenes, Total	ND		0.0030	mg/L	1	6/8/2011 09:34 AM
Surr: 4-Bromofluorobenzene	*89.3*		*77-129*	*%REC*	1	6/8/2011 09:34 AM
Surr: Trifluorotoluene	*106*		*75-130*	*%REC*	1	6/8/2011 09:34 AM

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

ALS Environmental

Date: *14-Jun-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: 1106138
Sample ID: MW 7
Lab ID: 1106138-05
Collection Date: 6/3/2011 10:05 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.0014**		**0.0010**	**mg/L**	1	6/8/2011 09:51 AM
Toluene	ND		0.0010	mg/L	1	6/8/2011 09:51 AM
Ethylbenzene	ND		0.0010	mg/L	1	6/8/2011 09:51 AM
Xylenes, Total	ND		0.0030	mg/L	1	6/8/2011 09:51 AM
Surr: 4-Bromofluorobenzene	*90.4*		*77-129*	*%REC*	1	6/8/2011 09:51 AM
Surr: Trifluorotoluene	*106*		*75-130*	*%REC*	1	6/8/2011 09:51 AM

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

ALS Environmental

Date: *14-Jun-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: 1106138
Sample ID: MW 8
Lab ID: 1106138-06
Collection Date: 6/3/2011 01:35 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**3.9**		**0.025**	**mg/L**	25	6/14/2011 01:45 AM
Toluene	**0.014**	P	**0.010**	**mg/L**	10	6/14/2011 11:42 AM
Ethylbenzene	**0.49**		**0.025**	**mg/L**	25	6/14/2011 01:45 AM
Xylenes, Total	**0.59**		**0.075**	**mg/L**	25	6/14/2011 01:45 AM
Surr: 4-Bromofluorobenzene	*116*		*77-129*	*%REC*	25	6/14/2011 01:45 AM
Surr: 4-Bromofluorobenzene	*120*		*77-129*	*%REC*	10	6/14/2011 11:42 AM
Surr: Trifluorotoluene	*108*		*75-130*	*%REC*	25	6/14/2011 01:45 AM
Surr: Trifluorotoluene	*112*		*75-130*	*%REC*	10	6/14/2011 11:42 AM

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

ALS Environmental

Date: *14-Jun-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: 1106138
Sample ID: MW 9
Lab ID: 1106138-07
Collection Date: 6/3/2011 02:20 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**1.2**		**0.025**	**mg/L**	25	6/14/2011 02:05 AM
Toluene	**0.53**		**0.025**	**mg/L**	25	6/14/2011 02:05 AM
Ethylbenzene	**0.27**		**0.025**	**mg/L**	25	6/14/2011 02:05 AM
Xylenes, Total	**0.51**		**0.075**	**mg/L**	25	6/14/2011 02:05 AM
Surr: 4-Bromofluorobenzene	*112*		*77-129*	*%REC*	25	6/14/2011 02:05 AM
Surr: Trifluorotoluene	*104*		*75-130*	*%REC*	25	6/14/2011 02:05 AM

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

ALS Environmental

Date: *14-Jun-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: 1106138
Sample ID: MW 10
Lab ID: 1106138-08
Collection Date: 6/3/2011 02:10 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	**0.54**		**0.0050**	**mg/L**	5	6/14/2011 10:23 AM
Toluene	**0.11**		**0.0050**	**mg/L**	5	6/14/2011 10:23 AM
Ethylbenzene	**0.10**		**0.0050**	**mg/L**	5	6/14/2011 10:23 AM
Xylenes, Total	**0.15**		**0.015**	**mg/L**	5	6/14/2011 10:23 AM
Surr: 4-Bromofluorobenzene	*120*		*77-129*	*%REC*	5	6/14/2011 10:23 AM
Surr: Trifluorotoluene	*116*		*75-130*	*%REC*	5	6/14/2011 10:23 AM

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

ALS Environmental

Date: *14-Jun-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: 1106138
Sample ID: MW 11
Lab ID: 1106138-09
Collection Date: 6/3/2011 02:00 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	6/9/2011 10:00 PM
Toluene	ND		0.0010	mg/L	1	6/9/2011 10:00 PM
Ethylbenzene	ND		0.0010	mg/L	1	6/9/2011 10:00 PM
Xylenes, Total	ND		0.0030	mg/L	1	6/9/2011 10:00 PM
Surr: 4-Bromofluorobenzene	*91.1*		*77-129*	*%REC*	1	6/9/2011 10:00 PM
Surr: Trifluorotoluene	*112*		*75-130*	*%REC*	1	6/9/2011 10:00 PM

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

ALS Environmental

Date: *14-Jun-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: 1106138
Sample ID: MW 12
Lab ID: 1106138-10
Collection Date: 6/3/2011 04:00 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.20**		**0.010**	**mg/L**	10	6/14/2011 02:44 AM
Toluene	ND		0.0010	mg/L	1	6/9/2011 10:35 PM
Ethylbenzene	ND		0.0010	mg/L	1	6/9/2011 10:35 PM
Xylenes, Total	**0.013**		**0.0030**	**mg/L**	1	6/9/2011 10:35 PM
Surr: 4-Bromofluorobenzene	*107*		*77-129*	*%REC*	10	6/14/2011 02:44 AM
Surr: 4-Bromofluorobenzene	*95.0*		*77-129*	*%REC*	1	6/9/2011 10:35 PM
Surr: Trifluorotoluene	*102*		*75-130*	*%REC*	10	6/14/2011 02:44 AM
Surr: Trifluorotoluene	*123*		*75-130*	*%REC*	1	6/9/2011 10:35 PM

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

ALS Environmental

Date: *14-Jun-11*

Client: Premier Environmental Services
Project: Hugh Gathering
Work Order: 1106138
Sample ID: MW 13
Lab ID: 1106138-11
Collection Date: 6/3/2011 03:35 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.32**		**0.010**	**mg/L**	10	6/14/2011 03:04 AM
Toluene	ND		0.0010	mg/L	1	6/9/2011 10:18 PM
Ethylbenzene	ND		0.0010	mg/L	1	6/9/2011 10:18 PM
Xylenes, Total	**0.020**		**0.0030**	**mg/L**	1	6/9/2011 10:18 PM
Surr: 4-Bromofluorobenzene	*112*		*77-129*	*%REC*	10	6/14/2011 03:04 AM
Surr: 4-Bromofluorobenzene	*114*		*77-129*	*%REC*	1	6/9/2011 10:18 PM
Surr: Trifluorotoluene	*107*		*75-130*	*%REC*	10	6/14/2011 03:04 AM
Surr: Trifluorotoluene	*124*		*75-130*	*%REC*	1	6/9/2011 10:18 PM

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

Batch ID: **R111124** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **MEOHW2-060711-R111124** Units: **µg/L** Analysis Date: **6/7/2011 09:57 PM**

Client ID: Run ID: **BTEX1_110607B** SeqNo: **2417893** Prep Date: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	50								
Toluene	ND	50								
Ethylbenzene	ND	50								
Xylenes, Total	ND	150								
Surr: 4-Bromofluorobenzene	*1363*	50	*1500*	0	*90.9*	*77-129*	0			
Surr: Trifluorotoluene	*1618*	50	*1500*	0	*108*	*75-130*	0			

MBLK Sample ID: **BBLKW2-060711-R111124** Units: **µg/L** Analysis Date: **6/7/2011 10:16 PM**

Client ID: Run ID: **BTEX1_110607B** SeqNo: **2417894** 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	*27.37*	1.0	*30*	0	*91.2*	*77-129*	0			
Surr: Trifluorotoluene	*32.3*	1.0	*30*	0	*108*	*75-130*	0			

LCS Sample ID: **BLCSW2-060711-R111124** Units: **µg/L** Analysis Date: **6/7/2011 09:36 PM**

Client ID: Run ID: **BTEX1_110607B** SeqNo: **2417892** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.46	1.0	20	0	102	77-126	0			
Toluene	20.84	1.0	20	0	104	80-124	0			
Ethylbenzene	21.4	1.0	20	0	107	76-125	0			
Xylenes, Total	62.75	3.0	60	0	105	79-124	0			
Surr: 4-Bromofluorobenzene	*29.65*	1.0	*30*	0	*98.8*	*77-129*	0			
Surr: Trifluorotoluene	*33.03*	1.0	*30*	0	*110*	*75-130*	0			

MS Sample ID: **1106109-03AMS** Units: **µg/L** Analysis Date: **6/7/2011 10:52 PM**

Client ID: Run ID: **BTEX1_110607B** SeqNo: **2417896** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	28.06	1.0	20	8.879	95.9	77-126	0			
Toluene	22.2	1.0	20	1.296	105	80-124	0			
Ethylbenzene	27.5	1.0	20	6.915	103	76-125	0			
Xylenes, Total	72.61	3.0	60	12.6	100	79-124	0			
Surr: 4-Bromofluorobenzene	*30.61*	1.0	*30*	0	*102*	*77-129*	0			
Surr: Trifluorotoluene	*33.51*	1.0	*30*	0	*112*	*75-130*	0			

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

Client: Premier Environmental Services
Work Order: 1106138
Project: Hugh Gathering

QC BATCH REPORT

Batch ID: **R111124** Instrument ID **BTEX1** Method: **SW8021B**

MSD Sample ID: **1106109-03AMSD** Units: **µg/L** Analysis Date: **6/7/2011 11:09 PM**

Client ID: Run ID: **BTEX1_110607B** SeqNo: **2417897** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	28.43	1.0	20	8.879	97.7	77-126	28.06	1.3	20	
Toluene	22.4	1.0	20	1.296	106	80-124	22.2	0.918	20	
Ethylbenzene	27.69	1.0	20	6.915	104	76-125	27.5	0.69	20	
Xylenes, Total	73.14	3.0	60	12.6	101	79-124	72.61	0.721	20	
Surr: 4-Bromofluorobenzene	*30.55*	1.0	*30*	0	*102*	*77-129*	30.61	*0.197*	*20*	
Surr: Trifluorotoluene	*33.55*	1.0	*30*	0	*112*	*75-130*	33.51	*0.126*	*20*	

The following samples were analyzed in this batch: 1106138-03A 1106138-04A 1106138-05A

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

Client: Premier Environmental Services
Work Order: 1106138
Project: Hugh Gathering

QC BATCH REPORT

Batch ID: **R111189** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **BBLKW1-060911-R111189** Units: **µg/L** Analysis Date: **6/9/2011 02:45 PM**
Client ID: Run ID: **BTEX1_110609B** SeqNo: **2418734** 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	*31.02*	1.0	*30*	0	*103*	*77-129*	0			
Surr: Trifluorotoluene	*32.07*	1.0	*30*	0	*107*	*75-130*	0			

LCS Sample ID: **BLCSW1-060911-R111189** Units: **µg/L** Analysis Date: **6/9/2011 01:23 PM**
Client ID: Run ID: **BTEX1_110609B** SeqNo: **2418733** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.89	1.0	20	0	104	77-126	0			
Toluene	20.69	1.0	20	0	103	80-124	0			
Ethylbenzene	21.56	1.0	20	0	108	76-125	0			
Xylenes, Total	61.88	3.0	60	0	103	79-124	0			
Surr: 4-Bromofluorobenzene	*29.01*	1.0	*30*	0	*96.7*	*77-129*	0			
Surr: Trifluorotoluene	*33.12*	1.0	*30*	0	*110*	*75-130*	0			

MS Sample ID: **1106111-05AMS** Units: **µg/L** Analysis Date: **6/9/2011 07:23 PM**
Client ID: Run ID: **BTEX1_110609B** SeqNo: **2419813** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19.81	1.0	20	0	99	77-126	0			
Toluene	19.59	1.0	20	0	97.9	80-124	0			
Ethylbenzene	20.39	1.0	20	0	102	76-125	0			
Xylenes, Total	59.35	3.0	60	0	98.9	79-124	0			
Surr: 4-Bromofluorobenzene	*32.09*	1.0	*30*	0	*107*	*77-129*	0			
Surr: Trifluorotoluene	*34.71*	1.0	*30*	0	*116*	*75-130*	0			

MSD Sample ID: **1106111-05AMSD** Units: **µg/L** Analysis Date: **6/9/2011 07:40 PM**
Client ID: Run ID: **BTEX1_110609B** SeqNo: **2419814** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19.17	1.0	20	0	95.9	77-126	19.81	3.28	20	
Toluene	19.18	1.0	20	0	95.9	80-124	19.59	2.11	20	
Ethylbenzene	20.08	1.0	20	0	100	76-125	20.39	1.52	20	
Xylenes, Total	58.02	3.0	60	0	96.7	79-124	59.35	2.27	20	
Surr: 4-Bromofluorobenzene	*29.42*	1.0	*30*	0	*98.1*	*77-129*	32.09	*8.68*	*20*	
Surr: Trifluorotoluene	*33.39*	1.0	*30*	0	*111*	*75-130*	34.71	*3.89*	*20*	

The following samples were analyzed in this batch: 1106138-09A 1106138-10A 1106138-11A

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

Client: Premier Environmental Services
Work Order: 1106138
Project: Hugh Gathering

QC BATCH REPORT

Batch ID: **R111332** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **BBLKW1-061311-R111332** Units: **µg/L** Analysis Date: **6/13/2011 02:40 PM**
Client ID: Run ID: **BTEX1_110613A** SeqNo: **2421954** 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	*31.61*	1.0	*30*	0	*105*	*77-129*	0			
Surr: Trifluorotoluene	*30.89*	1.0	*30*	0	*103*	*75-130*	0			

LCS Sample ID: **BLCSW1-061311-R111332** Units: **µg/L** Analysis Date: **6/13/2011 01:51 PM**
Client ID: Run ID: **BTEX1_110613A** SeqNo: **2421952** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	16.68	1.0	20	0	83.4	77-126	0			
Toluene	16.38	1.0	20	0	81.9	80-124	0			
Ethylbenzene	16.75	1.0	20	0	83.7	76-125	0			
Xylenes, Total	49.84	3.0	60	0	83.1	79-124	0			
Surr: 4-Bromofluorobenzene	*33.04*	1.0	*30*	0	*110*	*77-129*	0			
Surr: Trifluorotoluene	*31.32*	1.0	*30*	0	*104*	*75-130*	0			

LCSD Sample ID: **BLCSDW1-061311-R111332** Units: **µg/L** Analysis Date: **6/13/2011 06:17 PM**
Client ID: Run ID: **BTEX1_110613A** SeqNo: **2422035** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.65	1.0	20	0	93.3	77-126	16.68	11.1	20	
Toluene	18.49	1.0	20	0	92.4	80-124	16.38	12.1	20	
Ethylbenzene	18.93	1.0	20	0	94.7	76-125	16.75	12.2	20	
Xylenes, Total	56.12	3.0	60	0	93.5	79-124	49.84	11.9	20	
Surr: 4-Bromofluorobenzene	*32.21*	1.0	*30*	0	*107*	*77-129*	33.04	*2.52*	*20*	
Surr: Trifluorotoluene	*31.02*	1.0	*30*	0	*103*	*75-130*	31.32	*0.968*	*20*	

MS Sample ID: **1106146-02AMS** Units: **µg/L** Analysis Date: **6/13/2011 04:21 PM**
Client ID: Run ID: **BTEX1_110613A** SeqNo: **2421959** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	16.69	1.0	20	0.9279	78.8	77-126	0			
Toluene	15.74	1.0	20	0	78.7	80-124	0			S
Ethylbenzene	16.11	1.0	20	0	80.5	76-125	0			
Xylenes, Total	47.4	3.0	60	0	79	79-124	0			
Surr: 4-Bromofluorobenzene	*32.68*	1.0	*30*	0	*109*	*77-129*	0			
Surr: Trifluorotoluene	*30.29*	1.0	*30*	0	*101*	*75-130*	0			

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

Client: Premier Environmental Services
Work Order: 1106138
Project: Hugh Gathering

QC BATCH REPORT

Batch ID: **R111332** Instrument ID **BTEX1** Method: **SW8021B**

MSD Sample ID: **1106146-02AMSD** Units: **µg/L** Analysis Date: **6/13/2011 05:21 PM**
Client ID: Run ID: **BTEX1_110613A** SeqNo: **2421960** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.69	1.0	20	0.9279	83.8	77-126	16.69	5.83	20	
Toluene	16.63	1.0	20	0	83.2	80-124	15.74	5.53	20	
Ethylbenzene	17.02	1.0	20	0	85.1	76-125	16.11	5.5	20	
Xylenes, Total	49.91	3.0	60	0	83.2	79-124	47.4	5.15	20	
Surr: 4-Bromofluorobenzene	*32.03*	1.0	*30*	0	*107*	*77-129*	32.68	*2.01*	*20*	
Surr: Trifluorotoluene	*30.89*	1.0	*30*	0	*103*	*75-130*	30.29	*1.96*	*20*	

The following samples were analyzed in this batch:

1106138-01A	1106138-02A	1106138-06A
1106138-07A	1106138-10A	1106138-11A

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

Client: Premier Environmental Services
Work Order: 1106138
Project: Hugh Gathering

QC BATCH REPORT

Batch ID: **R111341** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **MEOHW2-061311-R111341** Units: **µg/L** Analysis Date: **6/14/2011 05:24 AM**
Client ID: Run ID: **BTEX1_110613C** SeqNo: **2422096** Prep Date: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	50								
Toluene	ND	50								
Ethylbenzene	ND	50								
Xylenes, Total	ND	150								
Surr: 4-Bromofluorobenzene	*1593*	50	*1500*	0	*106*	*77-129*	0			
Surr: Trifluorotoluene	*1513*	50	*1500*	0	*101*	*75-130*	0			

MBLK Sample ID: **BBLKW2-061311-R111341** Units: **µg/L** Analysis Date: **6/14/2011 05:44 AM**
Client ID: Run ID: **BTEX1_110613C** SeqNo: **2422097** 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	*31.31*	1.0	*30*	0	*104*	*77-129*	0			
Surr: Trifluorotoluene	*29.96*	1.0	*30*	0	*99.9*	*75-130*	0			

LCS Sample ID: **BLCSW2-061311-R111341** Units: **µg/L** Analysis Date: **6/14/2011 05:04 AM**
Client ID: Run ID: **BTEX1_110613C** SeqNo: **2422095** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.04	1.0	20	0	90.2	77-126	0			
Toluene	18.63	1.0	20	0	93.2	80-124	0			
Ethylbenzene	19.18	1.0	20	0	95.9	76-125	0			
Xylenes, Total	56.79	3.0	60	0	94.6	79-124	0			
Surr: 4-Bromofluorobenzene	*32.84*	1.0	*30*	0	*109*	*77-129*	0			
Surr: Trifluorotoluene	*30.84*	1.0	*30*	0	*103*	*75-130*	0			

MS Sample ID: **1106283-05AMS** Units: **µg/L** Analysis Date: **6/14/2011 07:43 AM**
Client ID: Run ID: **BTEX1_110613C** SeqNo: **2422103** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.62	1.0	20	0	93.1	77-126	0			
Toluene	18.75	1.0	20	0	93.8	80-124	0			
Ethylbenzene	19.1	1.0	20	0	95.5	76-125	0			
Xylenes, Total	56.28	3.0	60	0	93.8	79-124	0			
Surr: 4-Bromofluorobenzene	*32.38*	1.0	*30*	0	*108*	*77-129*	0			
Surr: Trifluorotoluene	*30.84*	1.0	*30*	0	*103*	*75-130*	0			

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

Client: Premier Environmental Services
Work Order: 1106138
Project: Hugh Gathering

QC BATCH REPORT

Batch ID: **R111341** Instrument ID **BTEX1** Method: **SW8021B**

MSD Sample ID: **1106283-05AMSD** Units: **µg/L** Analysis Date: **6/14/2011 08:03 AM**
Client ID: Run ID: **BTEX1_110613C** SeqNo: **2422104** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.12	1.0	20	0	90.6	77-126	18.62	2.74	20	
Toluene	18.73	1.0	20	0	93.7	80-124	18.75	0.11	20	
Ethylbenzene	19.22	1.0	20	0	96.1	76-125	19.1	0.64	20	
Xylenes, Total	56.71	3.0	60	0	94.5	79-124	56.28	0.762	20	
Surr: 4-Bromofluorobenzene	*32.54*	1.0	*30*	0	*108*	*77-129*	32.38	*0.512*	*20*	
Surr: Trifluorotoluene	*30.78*	1.0	*30*	0	*103*	*75-130*	30.84	*0.176*	*20*	

The following samples were analyzed in this batch: 1106138-06A 1106138-08A

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

ALS Environmental

Date: 14-Jun-11

Client: Premier Environmental Services
Project: Hugh Gathering
WorkOrder: 1106138

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 2

COC ID: 33474

1106138

PREMIER ENV: Premier Environmental Services

Project: Hugh Gathering

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	Hugh Gathering	A	BTEX (8021)
Work Order		Project Number	207032	B	
Company Name	Premier Environmental Services	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	~~MW1~~ DID NOT SAMPLE	6-3-11	~~1445~~	GW	HCL	3	X										
2	MW2		1445														
3	~~MW3~~ DID NOT SAMPLE																
4	MW4		1510														
5	MW5		1347														
6	MW6		1126														
7	MW7		1005														
8	MW8		1335														
9	MW9		1420														
10	MW10		1410														

Sampler(s) Please Print & Sign	Shipment Method	Required Turnaround Time: (Check Box)	Results Due Date:
Matt Grubbs Shane Diller	FEDEX	☐ Std 10 WK Days ☑ 5 WK Days ☐ Other ☐ 2 WK Days ☐ 24 Hour	

Relinquished by:	Date:	Time:	Received by:	Notes: 5 Day TAT.
Matt Grubbs	6-3-11		FEDEX	
Relinquished by:	Date: 6/4/11	Time: 0830	Received by (Laboratory): Ron ALS	Cooler ID / Cooler Temp.
Logged by (Laboratory):	Date: /	Time:	Checked by (Laboratory):	

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

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

Chain of Custody Form

Page 2 of 2

COC ID: 33473

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

ALS Project Manager:		ALS Work Order #:	

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hugh Gathering	A	BTEX (8021)
Work Order		Project Number	207032	B	
Company Name	Premier Environmental Services	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	MW11	6-3-11	1400	GW	HCL	3	X										
2	MW12	"	1600	"	"	"	"										
3	MW13	"	1535	"	"	"	"										
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign	Shipment Method	Required Turnaround Time: (Check Box)	Results Due Date:
Matt Grubbs Shane Miller	FEDEX	☐ Std 10 WK Days ☑ 5 WK Days ☐ Other ☐ 2 WK Days ☐ 24 Hour	

Relinquished by:	Date:	Time:	Received by:
Matt Grubbs	6-3-11		FEDEX
Relinquished by:	Date:	Time:	Received by (Laboratory):
	6/4/11	0830	RD ALS.
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.

ALS Environmental

Sample Receipt Checklist

Client Name: **PREMIER ENV** Date/Time Received: **04-Jun-11 08:30**

Work Order: **1106138** Received by: **RDN**

Checklist completed by Rachel D. Naran (eSignature) 04-Jun-11 (Date) Reviewed by: Patricia L. Lynch (eSignature) 07-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):	1.1,1.7	002	
Cooler(s)/Kit(s):	1816,2341		
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 received, but not on COC. Logged in without analyses

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

1106138

ALS Environmental	CUSTODY SEAL	Seal Broken By:
10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887 1216	Date: 6-3-11 Time: Name: Matt Grubbs Company: Premier	Date: 6/4/11

ALS Environmental	CUSTODY SEAL	Seal Broken By:
10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887 2341	Date: 6-3-11 Time: Name: Matt Grubbs Company: Premier	Date: 6/4/11

te FedEx Tracking Number 875894952100

nder's me Phone

Company

Address

Dept/Floor/Suite/Room

Y State ZIP

ur Internal Billing Reference

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: Hugh Gathering Work Order: **1108994**

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: Hugh Gathering
Work Order: **1108994**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1108994-01	MW 5	Water		8/29/2011 14:05	8/30/2011 09:35	☐
1108994-02	MW 6	Water		8/29/2011 14:10	8/30/2011 09:35	☐
1108994-03	MW 7	Water		8/29/2011 14:15	8/30/2011 09:35	☐
1108994-04	MW 11	Water		8/29/2011 14:20	8/30/2011 09:35	☐
1108994-05	MW 12	Water		8/29/2011 14:25	8/30/2011 09:35	☐
1108994-06	MW 13	Water		8/29/2011 14:30	8/30/2011 09:35	☐
1108994-07	Trip Blank	Water		8/29/2011	8/30/2011 09:35	☐

ALS Environmental

Date: *06-Sep-11*

Client: EarthCon Consultants, Inc.
Project: Hugh Gathering
Work Order: 1108994
Sample ID: MW 5
Lab ID: 1108994-01
Collection Date: 8/29/2011 02:05 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **RPM**
Benzene	**0.0019**		**0.0010**	**mg/L**	1	9/2/2011 05:22 PM
Toluene	**0.0036**	P	**0.0010**	**mg/L**	1	9/2/2011 05:22 PM
Ethylbenzene	**0.068**		**0.0010**	**mg/L**	1	9/2/2011 05:22 PM
Xylenes, Total	**0.029**		**0.0030**	**mg/L**	1	9/2/2011 05:22 PM
Surr: 4-Bromofluorobenzene	*83.1*		*77-129*	*%REC*	1	9/2/2011 05:22 PM
Surr: Trifluorotoluene	*101*		*75-130*	*%REC*	1	9/2/2011 05:22 PM

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

ALS Environmental

Date: *06-Sep-11*

Client: EarthCon Consultants, Inc.
Project: Hugh Gathering
Sample ID: MW 6
Collection Date: 8/29/2011 02:10 PM

Work Order: 1108994
Lab ID: 1108994-02
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 05:39 PM
Toluene	ND		0.0010	mg/L	1	9/2/2011 05:39 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/2/2011 05:39 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/2/2011 05:39 PM
Surr: 4-Bromofluorobenzene	*83.1*		*77-129*	*%REC*	1	9/2/2011 05:39 PM
Surr: Trifluorotoluene	*107*		*75-130*	*%REC*	1	9/2/2011 05:39 PM

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

ALS Environmental

Date: *06-Sep-11*

Client: EarthCon Consultants, Inc.
Project: Hugh Gathering
Work Order: 1108994
Sample ID: MW 7
Lab ID: 1108994-03
Collection Date: 8/29/2011 02:15 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **RPM**
Benzene	**0.0090**		**0.0010**	**mg/L**	1	9/2/2011 05:57 PM
Toluene	ND		0.0010	mg/L	1	9/2/2011 05:57 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/2/2011 05:57 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/2/2011 05:57 PM
Surr: 4-Bromofluorobenzene	*83.3*		*77-129*	*%REC*	1	9/2/2011 05:57 PM
Surr: Trifluorotoluene	*106*		*75-130*	*%REC*	1	9/2/2011 05:57 PM

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

ALS Environmental

Date: *06-Sep-11*

Client: EarthCon Consultants, Inc.
Project: Hugh Gathering
Sample ID: MW 11
Collection Date: 8/29/2011 02:20 PM

Work Order: 1108994
Lab ID: 1108994-04
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 06:14 PM
Toluene	ND		0.0010	mg/L	1	9/2/2011 06:14 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/2/2011 06:14 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/2/2011 06:14 PM
Surr: 4-Bromofluorobenzene	*86.2*		*77-129*	*%REC*	1	9/2/2011 06:14 PM
Surr: Trifluorotoluene	*108*		*75-130*	*%REC*	1	9/2/2011 06:14 PM

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

ALS Environmental

Date: *06-Sep-11*

Client: EarthCon Consultants, Inc.
Project: Hugh Gathering
Work Order: 1108994
Sample ID: MW 12
Lab ID: 1108994-05
Collection Date: 8/29/2011 02:25 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **RPM**
Benzene	**0.25**		**0.010**	**mg/L**	10	9/2/2011 11:52 AM
Toluene	ND		0.0010	mg/L	1	9/2/2011 01:19 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/2/2011 01:19 PM
Xylenes, Total	**0.033**		**0.0030**	**mg/L**	1	9/2/2011 01:19 PM
Surr: 4-Bromofluorobenzene	*84.4*		*77-129*	*%REC*	1	9/2/2011 01:19 PM
Surr: 4-Bromofluorobenzene	*83.5*		*77-129*	*%REC*	10	9/2/2011 11:52 AM
Surr: Trifluorotoluene	*113*		*75-130*	*%REC*	1	9/2/2011 01:19 PM
Surr: Trifluorotoluene	*106*		*75-130*	*%REC*	10	9/2/2011 11:52 AM

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

ALS Environmental

Date: *06-Sep-11*

Client: EarthCon Consultants, Inc.
Project: Hugh Gathering
Sample ID: MW 13
Collection Date: 8/29/2011 02:30 PM

Work Order: 1108994
Lab ID: 1108994-06
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **RPM**
Benzene	**0.11**		**0.0010**	**mg/L**	1	9/2/2011 01:36 PM
Toluene	ND		0.0010	mg/L	1	9/2/2011 01:36 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/2/2011 01:36 PM
Xylenes, Total	**0.0086**	P	**0.0030**	**mg/L**	1	9/2/2011 01:36 PM
Surr: 4-Bromofluorobenzene	*86.8*		*77-129*	*%REC*	1	9/2/2011 01:36 PM
Surr: Trifluorotoluene	*110*		*75-130*	*%REC*	1	9/2/2011 01:36 PM

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

ALS Environmental

Date: 06-Sep-11

Client: EarthCon Consultants, Inc.

Work Order: 1108994

Project: Hugh Gathering

QC BATCH REPORT

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: 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: 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: 1108994
Project: Hugh Gathering

QC BATCH REPORT

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

The following samples were analyzed in this batch:

1108994-01A	1108994-02A	1108994-03A
1108994-04A	1108994-05A	1108994-06A

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

ALS Environmental

Date: 06-Sep-11

Client: EarthCon Consultants, Inc.
Project: Hugh Gathering
WorkOrder: **1108994**

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 ____

COC ID: 24669

1108994

PREMIER ENV: EarthCon Consultants, Inc.

Project: Hugh Gathering

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name		A	
Work Order		Project Number	207032	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	MW 5	8.29.11	14:05	GW	HCl	3											
2	MW 6		14:10														
3	MW 7		14:15														
4	MW 11		14:20														
5	MW 12		14:25														
6	MW 13		14:30														
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign	Shipment Method	Required Turnaround Time: (Check Box)	Results Due Date:
Matt Grubbs Shane Miller	FedEx		

Relinquished by:	Date:	Time:	Received by:	Notes:
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):	

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: **1108994** Received by: **PMG**

Checklist completed by Paresh M. Giga (eSignature) 31-Aug-11 (Date) Reviewed by: Patricia L. Lynch (eSignature) 01-Sep-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):	1.5	002	
Cooler(s)/Kit(s):			
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:			

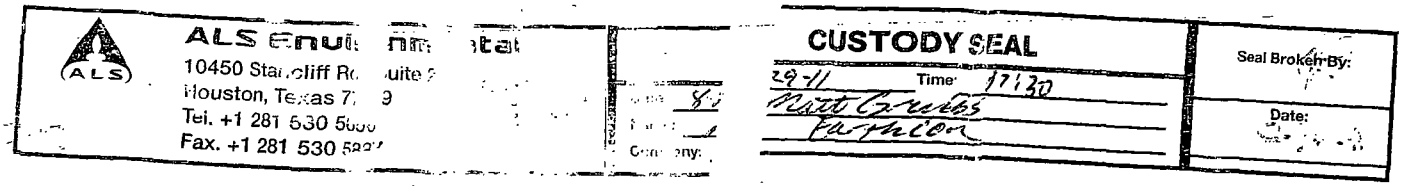
Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:



This portion can be removed for recipient's records.

From
FedEx Tracking Number 8766985796 39

Sender's Name Phone

Company

Address
Dept/Floor/Suite/Room

State ZIP

Your Internal Billing Reference

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: Hugh Gathering

Work Order: **1111906**

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 22.

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

Sincerely,

Patricia L. Lynch

Electronically approved by: Mary K. Knowles

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: Hugh Gathering
Work Order: **1111906**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1111906-01	MW 5	Water		11/29/2011 14:50	11/30/2011 09:35	☐
1111906-02	MW 6	Water		11/29/2011 14:15	11/30/2011 09:35	☐
1111906-03	MW 7	Water		11/29/2011 14:25	11/30/2011 09:35	☐
1111906-04	MW 11	Water		11/29/2011 14:35	11/30/2011 09:35	☐
1111906-05	MW 12	Water		11/29/2011 15:20	11/30/2011 09:35	☐
1111906-06	MW 13	Water		11/29/2011 15:30	11/30/2011 09:35	☐
1111906-07	Trip Blank	Water		11/29/2011	11/30/2011 09:35	☐

Client:	EarthCon Consultants, Inc.
Project:	Hugh Gathering
Work Order:	1111906

Case Narrative

No exceptions.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: Hugh Gathering
Work Order: 1111906
Sample ID: MW 5
Lab ID: 1111906-01
Collection Date: 11/29/2011 02:50 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	ND		0.0010	mg/L	1	12/3/2011 01:01 AM
Toluene	**0.0023**		**0.0010**	**mg/L**	1	12/3/2011 01:01 AM
Ethylbenzene	**0.074**		**0.0010**	**mg/L**	1	12/3/2011 01:01 AM
Xylenes, Total	**0.028**		**0.0030**	**mg/L**	1	12/3/2011 01:01 AM
Surr: 4-Bromofluorobenzene	*109*		*77-129*	*%REC*	1	12/3/2011 01:01 AM
Surr: Trifluorotoluene	*103*		*75-130*	*%REC*	1	12/3/2011 01:01 AM

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

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: Hugh Gathering
Sample ID: MW 6
Collection Date: 11/29/2011 02:15 PM

Work Order: 1111906
Lab ID: 1111906-02
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	ND		0.0010	mg/L	1	12/3/2011 01:18 AM
Toluene	ND		0.0010	mg/L	1	12/3/2011 01:18 AM
Ethylbenzene	ND		0.0010	mg/L	1	12/3/2011 01:18 AM
Xylenes, Total	ND		0.0030	mg/L	1	12/3/2011 01:18 AM
Surr: 4-Bromofluorobenzene	*90.8*		*77-129*	*%REC*	1	12/3/2011 01:18 AM
Surr: Trifluorotoluene	*88.0*		*75-130*	*%REC*	1	12/3/2011 01:18 AM

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

ALS Environmental

Date: *06-Dec-11*

Client:	EarthCon Consultants, Inc.		
Project:	Hugh Gathering	**Work Order:**	1111906
Sample ID:	MW 7	**Lab ID:**	1111906-03
Collection Date:	11/29/2011 02:25 PM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	**0.011**		**0.0010**	**mg/L**	1	12/3/2011 01:36 AM
Toluene	ND		0.0010	mg/L	1	12/3/2011 01:36 AM
Ethylbenzene	ND		0.0010	mg/L	1	12/3/2011 01:36 AM
Xylenes, Total	ND		0.0030	mg/L	1	12/3/2011 01:36 AM
Surr: 4-Bromofluorobenzene	*91.9*		*77-129*	*%REC*	1	12/3/2011 01:36 AM
Surr: Trifluorotoluene	*90.1*		*75-130*	*%REC*	1	12/3/2011 01:36 AM

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

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: Hugh Gathering
Work Order: 1111906
Sample ID: MW 11
Lab ID: 1111906-04
Collection Date: 11/29/2011 02:35 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	ND		0.0010	mg/L	1	12/2/2011 01:21 AM
Toluene	ND		0.0010	mg/L	1	12/2/2011 01:21 AM
Ethylbenzene	ND		0.0010	mg/L	1	12/2/2011 01:21 AM
Xylenes, Total	ND		0.0030	mg/L	1	12/2/2011 01:21 AM
Surr: 4-Bromofluorobenzene	*89.0*		*77-129*	*%REC*	1	12/2/2011 01:21 AM
Surr: Trifluorotoluene	*89.8*		*75-130*	*%REC*	1	12/2/2011 01:21 AM

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

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: Hugh Gathering
Work Order: 1111906
Sample ID: MW 12
Lab ID: 1111906-05
Collection Date: 11/29/2011 03:20 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	**0.36**		**0.0050**	**mg/L**	5	12/3/2011 02:28 AM
Toluene	ND		0.0010	mg/L	1	12/5/2011 01:15 PM
Ethylbenzene	ND		0.0010	mg/L	1	12/5/2011 01:15 PM
Xylenes, Total	**0.021**		**0.0030**	**mg/L**	1	12/5/2011 01:15 PM
Surr: 4-Bromofluorobenzene	*98.6*		*77-129*	*%REC*	1	12/5/2011 01:15 PM
Surr: 4-Bromofluorobenzene	*91.0*		*77-129*	*%REC*	5	12/3/2011 02:28 AM
Surr: Trifluorotoluene	*114*		*75-130*	*%REC*	1	12/5/2011 01:15 PM
Surr: Trifluorotoluene	*97.4*		*75-130*	*%REC*	5	12/3/2011 02:28 AM

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

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: Hugh Gathering
Work Order: 1111906
Sample ID: MW 13
Lab ID: 1111906-06
Collection Date: 11/29/2011 03:30 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	**0.25**		**0.0050**	**mg/L**	5	12/3/2011 02:45 AM
Toluene	ND		0.0010	mg/L	1	12/6/2011 10:41 AM
Ethylbenzene	ND		0.0010	mg/L	1	12/6/2011 10:41 AM
Xylenes, Total	**0.0050**		**0.0030**	**mg/L**	1	12/6/2011 10:41 AM
Surr: 4-Bromofluorobenzene	*90.6*		*77-129*	*%REC*	1	12/6/2011 10:41 AM
Surr: 4-Bromofluorobenzene	*93.9*		*77-129*	*%REC*	5	12/3/2011 02:45 AM
Surr: Trifluorotoluene	*106*		*75-130*	*%REC*	1	12/6/2011 10:41 AM
Surr: Trifluorotoluene	*92.4*		*75-130*	*%REC*	5	12/3/2011 02:45 AM

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

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: Hugh Gathering
Sample ID: Trip Blank
Collection Date: 11/29/2011

Work Order: 1111906
Lab ID: 1111906-07
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	ND		0.0010	mg/L	1	12/6/2011 10:23 AM
Toluene	ND		0.0010	mg/L	1	12/6/2011 10:23 AM
Ethylbenzene	ND		0.0010	mg/L	1	12/6/2011 10:23 AM
Xylenes, Total	ND		0.0030	mg/L	1	12/6/2011 10:23 AM
Surr: 4-Bromofluorobenzene	*94.5*		*77-129*	*%REC*	1	12/6/2011 10:23 AM
Surr: Trifluorotoluene	*85.1*		*75-130*	*%REC*	1	12/6/2011 10:23 AM

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

Batch ID: **R120084** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **BBLKW2-111201-R120084** Units: **µg/L** Analysis Date: **12/1/2011 09:36 PM**

Client ID: Run ID: **BTEX1_111201C** SeqNo: **2616312** 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	*26.42*	1.0	*30*	0	*88.1*	*77-129*	0			
Surr: Trifluorotoluene	*26.81*	1.0	*30*	0	*89.4*	*75-130*	0			

LCS Sample ID: **BLCSW2-111201-R120084** Units: **µg/L** Analysis Date: **12/1/2011 08:45 PM**

Client ID: Run ID: **BTEX1_111201C** SeqNo: **2616309** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.33	1.0	20	0	112	77-126	0			
Toluene	22.25	1.0	20	0	111	80-124	0			
Ethylbenzene	22.14	1.0	20	0	111	76-125	0			
Xylenes, Total	66.09	3.0	60	0	110	79-124	0			
Surr: 4-Bromofluorobenzene	*27.48*	1.0	*30*	0	*91.6*	*77-129*	0			
Surr: Trifluorotoluene	*27.87*	1.0	*30*	0	*92.9*	*75-130*	0			

LCSD Sample ID: **BLCSDW2-111201-R120084** Units: **µg/L** Analysis Date: **12/1/2011 09:02 PM**

Client ID: Run ID: **BTEX1_111201C** SeqNo: **2616310** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.99	1.0	20	0	110	77-126	22.33	1.51	20	
Toluene	21.9	1.0	20	0	110	80-124	22.25	1.59	20	
Ethylbenzene	21.73	1.0	20	0	109	76-125	22.14	1.87	20	
Xylenes, Total	65.02	3.0	60	0	108	79-124	66.09	1.64	20	
Surr: 4-Bromofluorobenzene	*27.7*	1.0	*30*	0	*92.3*	*77-129*	27.48	*0.765*	*20*	
Surr: Trifluorotoluene	*27.97*	1.0	*30*	0	*93.2*	*75-130*	27.87	*0.358*	*20*	

MS Sample ID: **1111901-07AMS** Units: **µg/L** Analysis Date: **12/2/2011 04:50 AM**

Client ID: Run ID: **BTEX1_111201C** SeqNo: **2616335** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.93	1.0	20	0	115	77-126	0			
Toluene	22.94	1.0	20	0	115	80-124	0			
Ethylbenzene	22.61	1.0	20	0	113	76-125	0			
Xylenes, Total	67.06	3.0	60	0	112	79-124	0			
Surr: 4-Bromofluorobenzene	*27.2*	1.0	*30*	0	*90.7*	*77-129*	0			
Surr: Trifluorotoluene	*27.23*	1.0	*30*	0	*90.8*	*75-130*	0			

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

Client: EarthCon Consultants, Inc.
Work Order: 1111906
Project: Hugh Gathering

QC BATCH REPORT

Batch ID: **R120084** Instrument ID **BTEX1** Method: **SW8021B**

MSD Sample ID: **1111901-07AMSD** Units: **µg/L** Analysis Date: **12/2/2011 05:07 AM**

Client ID: Run ID: **BTEX1_111201C** SeqNo: **2616336** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	23.06	1.0	20	0	115	77-126	22.93	0.561	20	
Toluene	23.04	1.0	20	0	115	80-124	22.94	0.439	20	
Ethylbenzene	22.73	1.0	20	0	114	76-125	22.61	0.508	20	
Xylenes, Total	67.36	3.0	60	0	112	79-124	67.06	0.454	20	
Surr: 4-Bromofluorobenzene	*27.7*	1.0	*30*	0	*92.3*	*77-129*	27.2	*1.81*	*20*	
Surr: Trifluorotoluene	*27.57*	1.0	*30*	0	*91.9*	*75-130*	27.23	*1.23*	*20*	

The following samples were analyzed in this batch: 1111906-04A

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

Client: EarthCon Consultants, Inc.
Work Order: 1111906
Project: Hugh Gathering

QC BATCH REPORT

Batch ID: **R120114** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **BBLKW2-111202-R120114** Units: **µg/L** Analysis Date: **12/2/2011 09:51 PM**
Client ID: Run ID: **BTEX1_111202B** SeqNo: **2617047** 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	*26.99*	1.0	*30*	0	*90*	*77-129*	0			
Surr: Trifluorotoluene	*26.44*	1.0	*30*	0	*88.1*	*75-130*	0			

LCS Sample ID: **BLCSW2-111202-R120114** Units: **µg/L** Analysis Date: **12/2/2011 08:59 PM**
Client ID: Run ID: **BTEX1_111202B** SeqNo: **2617044** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19.78	1.0	20	0	98.9	77-126	0			
Toluene	19.67	1.0	20	0	98.4	80-124	0			
Ethylbenzene	19.51	1.0	20	0	97.5	76-125	0			
Xylenes, Total	58.5	3.0	60	0	97.5	79-124	0			
Surr: 4-Bromofluorobenzene	*27.31*	1.0	*30*	0	*91*	*77-129*	0			
Surr: Trifluorotoluene	*27.02*	1.0	*30*	0	*90.1*	*75-130*	0			

LCSD Sample ID: **BLCSDW2-111202-R120114** Units: **µg/L** Analysis Date: **12/2/2011 09:16 PM**
Client ID: Run ID: **BTEX1_111202B** SeqNo: **2617045** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.21	1.0	20	0	91.1	77-126	19.78	8.27	20	
Toluene	18.16	1.0	20	0	90.8	80-124	19.67	8.02	20	
Ethylbenzene	17.69	1.0	20	0	88.5	76-125	19.51	9.75	20	
Xylenes, Total	52.97	3.0	60	0	88.3	79-124	58.5	9.92	20	
Surr: 4-Bromofluorobenzene	*27.34*	1.0	*30*	0	*91.1*	*77-129*	27.31	*0.126*	*20*	
Surr: Trifluorotoluene	*27.46*	1.0	*30*	0	*91.5*	*75-130*	27.02	*1.62*	*20*	

MS Sample ID: **1112047-01AMS** Units: **µg/L** Analysis Date: **12/2/2011 10:26 PM**
Client ID: Run ID: **BTEX1_111202B** SeqNo: **2617049** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.58	1.0	20	0	113	77-126	0			
Toluene	22.44	1.0	20	0	112	80-124	0			
Ethylbenzene	22.21	1.0	20	0	111	76-125	0			
Xylenes, Total	65.91	3.0	60	0	110	79-124	0			
Surr: 4-Bromofluorobenzene	*27.4*	1.0	*30*	0	*91.3*	*77-129*	0			
Surr: Trifluorotoluene	*27.25*	1.0	*30*	0	*90.8*	*75-130*	0			

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

Client: EarthCon Consultants, Inc.
Work Order: 1111906
Project: Hugh Gathering

QC BATCH REPORT

Batch ID: **R120114** Instrument ID **BTEX1** Method: **SW8021B**

MSD Sample ID: **1112047-01AMSD** Units: **µg/L** Analysis Date: **12/2/2011 10:43 PM**

Client ID: Run ID: **BTEX1_111202B** SeqNo: **2617050** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	23.09	1.0	20	0	115	77-126	22.58	2.22	20	
Toluene	22.95	1.0	20	0	115	80-124	22.44	2.22	20	
Ethylbenzene	22.96	1.0	20	0	115	76-125	22.21	3.31	20	
Xylenes, Total	68.25	3.0	60	0	114	79-124	65.91	3.49	20	
Surr: 4-Bromofluorobenzene	*27.76*	1.0	*30*	0	*92.5*	*77-129*	27.4	*1.31*	*20*	
Surr: Trifluorotoluene	*27.11*	1.0	*30*	0	*90.4*	*75-130*	27.25	*0.518*	*20*	

The following samples were analyzed in this batch:

1111906-01A	1111906-02A	1111906-03A
1111906-05A	1111906-06A	

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

Client: EarthCon Consultants, Inc.
Work Order: 1111906
Project: Hugh Gathering

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
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
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
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: 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
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: 1111906
Project: Hugh Gathering

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: 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
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: 1111906-05A

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

Client: EarthCon Consultants, Inc.
Work Order: 1111906
Project: Hugh Gathering

QC BATCH REPORT

Batch ID: **R120196** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **BBLKW1-111206-R120196** Units: **µg/L** Analysis Date: **12/6/2011 10:06 AM**
Client ID: Run ID: **BTEX1_111206A** SeqNo: **2618612** 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	*28.2*	1.0	*30*	0	*94*	*77-129*	0			
Surr: Trifluorotoluene	*25.64*	1.0	*30*	0	*85.5*	*75-130*	0			

LCS Sample ID: **BLCSW1-111206-R120196** Units: **µg/L** Analysis Date: **12/6/2011 09:14 AM**
Client ID: Run ID: **BTEX1_111206A** SeqNo: **2618610** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.64	1.0	20	0	103	77-126	0			
Toluene	20.39	1.0	20	0	102	80-124	0			
Ethylbenzene	19.88	1.0	20	0	99.4	76-125	0			
Xylenes, Total	60.43	3.0	60	0	101	79-124	0			
Surr: 4-Bromofluorobenzene	*24.54*	1.0	*30*	0	*81.8*	*77-129*	0			
Surr: Trifluorotoluene	*26.07*	1.0	*30*	0	*86.9*	*75-130*	0			

LCS Sample ID: **BLCSW1-111206-R120196** Units: **µg/L** Analysis Date: **12/6/2011 09:31 AM**
Client ID: Run ID: **BTEX1_111206A** SeqNo: **2618611** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.36	1.0	20	0	102	77-126	0			
Toluene	20.21	1.0	20	0	101	80-124	0			
Ethylbenzene	19.89	1.0	20	0	99.4	76-125	0			
Xylenes, Total	61.33	3.0	60	0	102	79-124	0			
Surr: 4-Bromofluorobenzene	*28.78*	1.0	*30*	0	*95.9*	*77-129*	0			
Surr: Trifluorotoluene	*25.91*	1.0	*30*	0	*86.4*	*75-130*	0			

LCSD Sample ID: **BLCSDW1-111206-R120196** Units: **µg/L** Analysis Date: **12/6/2011 12:36 PM**
Client ID: Run ID: **BTEX1_111206A** SeqNo: **2618621** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.48	1.0	20	0	112	77-126	20.36	9.9	20	
Toluene	22.67	1.0	20	0	113	80-124	20.21	11.5	20	
Ethylbenzene	22.57	1.0	20	0	113	76-125	19.89	12.6	20	
Xylenes, Total	67.88	3.0	60	0	113	79-124	61.33	10.1	20	
Surr: 4-Bromofluorobenzene	*28.56*	1.0	*30*	0	*95.2*	*77-129*	28.78	*0.767*	*20*	
Surr: Trifluorotoluene	*25.59*	1.0	*30*	0	*85.3*	*75-130*	25.91	*1.25*	*20*	

The following samples were analyzed in this batch: 1111906-06A 1111906-07A

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

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

ALS Environmental

Date: 06-Dec-11

Client: EarthCon Consultants, Inc.
Project: Hugh Gathering
WorkOrder: **1111906**

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

Chain of Custody Fo

Page 1 of 1

COC ID: 48562

1111906

PREMIER ENV: EarthCon Consultants, inc.

Project: Hugh Gathering

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	Hugh Gathering	A	BTEX (8021)
Work Order		Project Number	207032	B	
Company Name	Earth Consulting Group, Inc.	Bill To Company	Plains All America, LP	C	
Send Report To	Kathleen Buxton	Invoice Attn		D	
Address	4000 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 5	11-29-11	14:50	G.W	HCL	3	X										
2	MW 6	"	14:15	"	"	"	"										
3	MW 7	"	14:25	"	"	"	"										
4	MW 11	"	14:35	"	"	"	"										
5	MW 12	"	15:20	"	"	"	"										
6	MW 13	"	15:30	"	"	"	"										
7																	
8																	
9																	
10																	

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

Shipment Method: FedEx

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

Results Due Date:

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

Notes: 5 Day TAT.

Cooler ID	Cooler Temp.
3563	

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: **1111906** Received by: **PMG**

Checklist completed by Rishil D. Naran (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):	1.9	002	
Cooler(s)/Kit(s):	3563		
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 trip blank; not on COC. Assigned BTEX.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

1119066.

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

3563

CUSTODY SEAL

Date: 11-29-11 Time: 17:30
Name: Matt Grubbs
Company: EARTHCON

11-30-11

This portion can be removed for Recipient's records.

Date 11-29-11 FedEx Tracking Number 877064684665

Sender's Name Matt Grubbs Phone 972 236-2131

Company EarthCon

Address [illegible]

State TX ZIP [illegible] Dept/Floor/Suite/Room

Your Internal Billing Reference 205071