AP-92

Plains
8” Moore to Jal #2

Annual Report
2013

PLAINS
ALL AMERICAN

March 18, 2014

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

Re: Plains All American – 2013 Annual Monitoring Reports
6 Sites in Lea County, New Mexico

Dear Mr. Griswold:

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:

8-inch Moore to Jal #1	AP-91 (1R-0380)	Section 16, T17S, R37E, Lea County
8-inch Moore to Jal #2	AP-92 (1R-0381)	Section 16, T17S, R37E, Lea County
C.S. Cayler	AP-052	Section 06, T17S, R37E, Lea County
Hobbs Junction Mainline	AP-054	Section 26, T18S, R37E, Lea County
Kimbrough Sweet 8-inch	AP-0029	Section 03, T18S, R37E, Lea County
Lovington Deep 6-inch	AP-037	Section 06, T17S, R36E, Lea County

Talon/LPE (Talon) 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 Talon 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,

Camille Bryant
Remediation Coordinator
Plains All American

CC: Geoff Leking, NMOCD, Hobbs, NM

Enclosures

2013 ANNUAL GROUNDWATER MONITORING REPORT

8" MOORE TO JAL #2
LEA COUNTY, NEW MEXICO
SRS #2002 - 10273
NMOCD REF. # AP-92

PLAINS PIPELINE, L.P.
333 CLAY STREET, SUITE 1600
HOUSTON, TEXAS

TALON/LPE PROJECT NO. 700376.045.01

Prepared by:

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Reviewed by:

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TALON/LPE

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March 2013

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NMOCD - New Mexico Oil Conservation Division
NMSLO – New Mexico State Land Office

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APPENDICES

1.0 INTRODUCTION AND OBJECTIVES

1.1 Objectives and Site Background

The 8" Moore to Jal #2 (site) is located approximately 9.2 miles southeast of Lovington, Lea County, New Mexico, on property owned by the State of New Mexico. The site is located within the West Lovington Oil Field at 32° 49' 56.61" N, 103° 15' 08.47" W. There are no residences, groundwater wells, or surface water bodies within a 1,000-foot radius of the site. The initial release occurred from an EOTT Energy Pipeline (EOTT) steel pipeline on October 22, 2002. Subsequently, EOTT changed its name to Link Energy in October 2003, and Plains Marketing, L.P. (Plains) purchased the assets of Link Energy on April 1, 2004. Initial reports estimated that 25 barrels (bbls) of crude oil were released. Approximately 5,794 square feet of surface area was impacted by the release.

On February 5, 2007, Talon/LPE (Talon) was retained by Plains to assume remediation activities at the site. Remediation activities at the site were previously conducted by Environmental Plus, Inc. (EPI).

1.2 Site Geology

The surface deposits in Lea County are composed of Blackwater Draw (Illinoian) sediments, Ogallala sediments and undivided Quaternary alluvium, which is also termed 'cover sands'. The soil in the upper two (2) feet at the site is composed of gravelly loam that consists of 43% sand, 18% clay and 40% silt and also contains abundant eroded gravel to cobble size caliche fragments. Below the top soil is predominately unconsolidated sand to weakly cemented sandstone which has undergone calichification of varying extent.

Below the Blackwater Draw Formation is the Ogallala Formation of Miocene to Pliocene age. The Ogallala Formation was deposited from sediments eroded from the Southern Rockies and consists mostly of eolian sediments, silty to very fine sand or loess. During the middle to late Miocene, the Ogallala was deposited by fluvial mechanism as paleovalley fill composed of gravelly to sandy braided stream deposits that trended west to east across the Southern High Plains. During the late Miocene the west to east drainage was diverted (captured) by the Pecos River. Subsequently, the Pecos River basin has experienced deflation, which facilitated eolian deposition on the Southern High Plains during the Pliocene.

1.3 Previous Environmental Investigations

Currently, there are a total of twenty-three (23) groundwater monitor wells that have been installed in the vicinity of the release (see Figure 1). With New Mexico Oil Conservation Division (NMOCD) approval and landowner concurrence, groundwater monitor well MW-1 was installed in July 2004. Subsequently, groundwater monitor wells MW-2, MW-3, and MW-4 were installed in October 2004, monitor wells MW-6 through MW-13 were installed in November 2007, MW-14 through MW-16 were installed in March of 2010 and MW-17 through MW-21 were installed in August of 2010. Replacement wells MW-3A and MW-4A,

and down-gradient monitor wells MW-22 and MW-23 were installed in December of 2013.

Phase-separated hydrocarbon (PSH) recovery operations have been performed at the site since 2004. Currently, there are two (2) skimmer pumps and four (4) total fluid pumps in operation at the site used to recover phase-separated hydrocarbon (PSH). Table 1, which summarizes historical groundwater and PSH gauging, is provided in Appendix B.

A transfer system was installed during the year 2011 that is designed to pump recovered groundwater from the site to the Rocky Smith SWD Systems, State 'E' #23 salt water disposal (SWD) (NMOCD # 307219) facility, thereby, eliminating the need to haul water to a disposal facility with a vacuum truck. The system is composed of a three (3) inch HDPE line that was installed (slip-lined) into the out of service Moore to Jal eight (8) inch pipeline from the site through the Moore to Jal #1 site to the C.S. Cayler site, where it is connected to the HDPE line that runs from the Cayler site to the aforereferenced SWD. A five (5) HP transfer pump is used to impel the water down the HDPE line.

1.4 Regulatory Framework

Groundwater analytical data collected from this site is evaluated to the New Mexico Water Quality Control Commission (NMWQCC) groundwater standards outlined in the table below.

New Mexico Water Quality Control Commission (NMWQCC) groundwater standards	
Compound	**mg/L**
Benzene	0.010
Toluene	0.750
Ethylbenzene	0.750
Total Xylenes	0.620
PAH (Naphthalene)	0.030
PAH (Benzo[a]-pyrene)	0.007

2.0 SITE ACTIVITIES

The sections that follow summarize groundwater monitoring and PSH recovery activities conducted at the subject site during the year 2013. The primary function of groundwater monitoring activities is to collect depth to fluid measurements and to collect groundwater samples from monitor wells for laboratory analysis. The objective of groundwater monitoring is to evaluate the status of the dissolved-phase and PSH plumes in order to verify the effectiveness of the remediation system as to inhibiting plume migration, reducing the volume of PSH impacting the groundwater and determining if modifications to the remediation system would improve its overall performance and efficiency.

A synopsis of analytical results for the four (4) groundwater monitoring events is located in Table 2, in Appendix B, and annotated in map form on Figures 3a through 3d in Appendix A. Laboratory analytical data reports and chain of custody documentation are included in Appendix C.

2.1 Groundwater Monitoring Activities

A total of four (4) groundwater monitoring events were conducted by Talon during the year 2013. The events occurred on: March 12, June 20, September 27, and December 30. Details of the gauging, purging, and sampling activities are presented below in Section 2.2.

2.2 Groundwater Gauging, Purging, and Sampling Procedures

During each groundwater monitoring event, all monitor wells were measured with an oil/water interface probe to determine static water levels and to determine the thickness of PSH accumulations if present. The data collected from measurements was used to construct groundwater gradient maps and PSH thickness maps. The results of the measured depths to fluids collected during the four (4) events are incorporated in Table 1 – Summary of Historical Fluid Level Measurements.

Subsequent to gauging, all monitor wells were purged using a down-hole pump equipped with vinyl tubing. The pump and tubing were decontaminated with Alconox® detergent and rinsed with distilled water after each use. Recovered purge water and water used in the decontamination process was contained in 55-gallon drums. After the groundwater monitoring event, all retained water was deposited into the on-site tank and later removed via the site transfer system to the SWD. Approximately 2,083 gallons of purged groundwater and water used for decontamination was generated during the monitoring events of 2013.

Groundwater samples were collected from all monitor wells not impacted with PSH using dedicated disposable polyethylene bailers. Groundwater samples were not collected from wells impacted with PSH. All groundwater samples were contained in laboratory supplied sample vials infused with the appropriate preservative required for the requested analysis. The groundwater samples were maintained on ice, in the custody of Talon personnel, until they were delivered to TraceAnalysis, Inc. or Xenco Laboratories in Midland, Texas for testing. The groundwater samples collected during the all four events were quantified for

benzene, toluene, ethylbenzene, and xylene (BTEX) by EPA Method SW-846 8021B.

2.3 Phase Separated Hydrocarbon Recovery

Prior to October 2008, a mobile recovery trailer with total fluids pumps was mobilized to the site on a weekly basis to recover PSH from monitor wells MW-1, MW-2, MW-3, MW-5, MW-6, MW-7, and MW-9.

On October 7, 2008, a permanent system was installed utilizing two (2) AP-4 pneumatic total fluid pumps in monitor wells MW-1 and MW-7 and four (4) skimmers in monitor wells MW-3, MW-5, MW-6, and MW-9 to recover PSH and to inhibit migration of the PSH plume. In 2013, the skimmer pumps in MW-5 and MW-6 were replaced with total fluids pumps. The skimmer assembly consists of bladder pumps combined with 24-inch traveling float specific gravity skimmer attachments. The skimmer system and total fluids pumps are powered by a single-phase 230 volt, 7.5 HP two stage reciprocating air compressor. Fluid, recovered by the pumps, is retained in a 6,500-gallon poly tank. The poly tank is equipped with a high level shut off switch to prevent overflow and it is located within a secondary containment compound that is outfitted with a poly-liner. Recovered PSH is periodically removed from the recovery tank with a vacuum truck. Recovered groundwater is transported to an approved NMOCD disposal facility via the water transfer system, and removed PSH is re-introduced to the Plains' pipeline system at the Plains operated Lea Station.

Talon personnel performed a minimum of weekly maintenance to the remediation system to ensure efficient operation, to optimize PSH recovery and to minimize down time. The poly tank is gauged weekly to monitor PSH recovery volume. The system has been effective at recovering PSH from the groundwater.

During 2013 the quarterly PSH and groundwater recovery totals are as follows:

- 1st Quarter - 4.75 bbls crude oil and 3895 bbls of groundwater
- 2nd Quarter – 9.22 bbls crude oil and 5673 bbls of groundwater
- 3rd Quarter – 9.88 bbls crude oil and 6453 bbls of groundwater
- 4th Quarter – 2.5 bbls crude oil and 4851 bbls of groundwater

During 2013 a total of 26.4 bbls of crude oil and a total of 20,872 bbls of groundwater were recovered by the PSH recovery system. Approximately 213 bbls of crude oil has been recovered at the subject site since PSH recovery activities were initiated.

2.4 Groundwater Monitoring Results

The sections that follow present the results from the four (4) groundwater monitoring events conducted at the subject site.

2.4.1 Physical Characteristics of the First Water-Bearing Zone

The primary groundwater resource under the Southern High Plains, including the site, is referred to as the Ogallala Aquifer or High Plains Aquifer. The Southern portion of the

Ogallala aquifer underlies an area of about 29,000 square miles (mi^2) in western Texas and eastern New Mexico, encompassing all or part of 31 counties in Texas and 6 counties in New Mexico.

The Ogallala Aquifer is generally unconfined and the poteniometric surface generally mirrors the land surface elevation with the regional flow direction is from the northwest to the southeast. The mean regional gradient is 15 feet per mile and the typical groundwater velocity averages seven inches per day. The regional hydraulic conductivity averages 17 gallons per day per square-foot and specific yield averages 16%.

The Ogallala Aquifer has experienced acute depletion from extensive irrigation and urban demand, which have exceeded the average annual recharge rate. Recharge of the Ogallala Aquifer on the Southern High Plains occurs predominately from rainfall runoff that accumulates in ephemeral streams and playa lakes as well as direct recharge in areas that contain permeable soils such as sand hills. Recharge rates vary depending on mechanism, but averages from 0 to 1.6 inches per year.

The composition of Ogallala groundwater is defined as mixed-cation-HCO_3, therefore, Ogallala groundwater is considered hard. Problems with scale have occurred with residential and commercial water systems that use Ogallala groundwater and often treatment strategies are employed to reduce the effects of scale. The typical total dissolved solids of Ogallala groundwater in the Hobbs-Lovington area is generally less than 1,000 mg/L (ppm) in areas not impacted by oil-field brines. The pH of Ogallala water averages 7.3.

2.4.2 Groundwater Gradient and Flow Direction

The depth to fluid measurements was collected during each of the four (4) groundwater monitoring events during the year 2013. The results of the fluid level measurements are summarized in Table 1 - Summary of Historical Fluid Level Measurements in Appendix B.

The collected data was used to construct potentiometric surface maps in order to interpret the groundwater gradient and flow direction. The maps, designated Figures 2a through 2d are presented in Appendix A.

The potentiometric surface maps constructed for each of the four (4) groundwater monitoring events indicate consistently that the groundwater flow direction is to southeast at an approximate gradient of 0.0040 feet/foot or approximately 21 feet per mile. Groundwater levels at the subject site have exhibited a steady decline of an average of 1.79 feet for the year. The declines in groundwater levels appear to be associated with a regional trend of declining groundwater levels for the Ogallala Aquifer.

2.4.3 Phase Separated Hydrocarbon (PSH)

An oil/water interface probe was used to determine the thicknesses of PSH during the four (4) groundwater monitoring events. Durring the events, several wells were blocked from accurate measurements by stuck pumps. This will be denoted in Table 1 - Summary of Historical Fluid Level Measurements in Appendix B. The following summarizes the status of the PSH thicknesses observed during the four groundwater monitoring events:

- In March 2013, PSH was observed in five (5) monitor wells MW-1, MW-5, MW-6, MW-7, and MW-9. PSH thickness ranged from 0.11 feet to 2.98 feet.
- In June 2013, PSH was observed in three (3) monitor wells MW-1, MW-5, and MW-9. PSH thickness ranged from 1.49 feet to 3.61 feet. MW-6 and MW-7 were not gauged due to stuck pumps, but are assumed to contain PSH.
- In September 2013, PSH was observed in three (3) monitor wells MW-1, MW-5, and MW-9. PSH thickness ranged from 1.78 feet to 4.15 feet. MW-6 and MW-7 were not gauged due to stuck pumps, but are assumed to contain PSH.
- In December 2013, PSH was observed in two (2) monitor wells MW-5, and MW-9. PSH thickness ranged from 1.87 feet to 3.61 feet. MW-1, MW-6, and MW-7 were not gauged due to stuck pumps, but are assumed to contain PSH.

In addition to potentiometric surface maps, isopleth maps were prepared depicting the measured PSH thicknesses and PSH plume geometry. PSH plume delineation and thickness maps are presented in Appendix A as Figures 3a through 3d. Currently, the PSH plume is delineated. PSH recovery operations have been performed at the site since 2004. Currently there are a total of four (4) total fluid pumps and two (2) skimmer pumps in operation at the site. A summary of the historical groundwater and PSH gauging results is provided in Table 1 in Appendix B.

2.4.4 Groundwater Analytical Results

During the first quarter, March 2013, sampling event, groundwater samples were collected from monitor wells MW-8, and MW-10 through MW-21. Monitor wells MW-1, MW-5, MW-6, MW-7, and MW-9 were not sampled due to the presence of PSH. Monitor wells MW-2, MW-3, and MW-4 were dry.

The following analytical results were observed from laboratory analyses:

- Benzene concentrations ranged from <0.000387 mg/L to 18.2 mg/L. Benzene concentrations exceeded the NMWQCC groundwater standard of 0.010 mg/L in groundwater samples collected from monitor wells MW-8, MW-13, MW-15, MW-18, and MW-19.
- Toluene concentrations ranged from <0.000465 mg/L to <0.0232 mg/L. The toluene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in the groundwater samples collected.
- Ethylbenzene concentrations ranged from < 0.000442 mg/L to 0.0921 mg/L. Ethylbenzene concentrations did not exceed the NMWQCC groundwater standard of

0.750 mg/L in the groundwater samples collected.

- Xylene concentrations ranged from <0.00100 mg/L to 0.0904 mg/L. Xylene concentrations did not exceed the NMWQCC groundwater standard of 0.620 mg/L in the groundwater samples collected.

During the June 2013 sampling event, groundwater samples were collected from monitor wells MW-8, and MW-10 through MW-21. Monitor wells MW-1, MW-5, MW-6, MW-7, and MW-9 were not sampled due to the presence of PSH (assumed presence in MW-6 and MW-7). Monitor wells MW-2, MW-3, and MW-4 were dry.

Laboratory analytical results of the groundwater samples exhibited the following findings:

- Benzene concentrations ranged from < 0.00100 mg/L to 30.2 mg/L. Benzene concentrations exceeded the NMWQCC groundwater standard of 0.010 mg/L in groundwater samples collected from monitor wells MW-8, MW-12, MW-13, MW-15, MW-16, and MW-18.
- Toluene concentrations ranged from <0.00200 mg/L to 0.00727 mg/L. The toluene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in the groundwater samples collected.
- Ethylbenzene concentrations ranged from < 0.00100 mg/L to 0.427 mg/L. The ethylbenzene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in the groundwater samples collected.
- Xylene concentrations ranged from < 0.00100 mg/L to 0.00296 mg/L. The xylene concentrations did not exceed the NMWQCC groundwater standard of 0.620 mg/L in any of the collected groundwater samples.

During the September 2013 sampling event, groundwater samples were collected from monitor wells MW-8, and MW-10 through MW-21. Monitor wells MW-1, MW-5, MW-6, MW-7, and MW-9 were not sampled due to the presence of PSH (assumed presence in MW-6 and MW-7). Monitor wells MW-2, MW-3, and MW-4 were dry.

Laboratory analytical results of the groundwater samples exhibited the following findings:

- Benzene concentrations ranged from <0.00100 mg/L to 24.2 mg/L. Benzene concentrations exceeded the NMWQCC groundwater standard of 0.010 mg/L in groundwater samples collected from monitor wells MW-13 and MW-15.
- Toluene concentrations ranged from <0.00100 mg/L to <0.200 mg/L. The toluene concentration did not exceed the NMWQCC groundwater standard of 0.750 mg/L in any of the groundwater samples collected.
- Ethylbenzene concentrations ranged from <0.00100 mg/L to 0.00210 mg/L. Ethylbenzene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in any of the collected groundwater samples.
- Xylene concentrations ranged from <0.00100 mg/L to 0.00250 mg/L. The xylene concentration did not exceed the NMWQCC groundwater standard of 0.620 mg/L in

any of the groundwater samples collected.

During the December 2013 sampling event, groundwater samples were collected from monitor wells MW-8, and MW-10 through MW-21. Monitor wells MW-1, MW-5, MW-6, MW-7, and MW-9 were not sampled due to the presence of PSH (assumed presence in MW-1, MW-6, and MW-7). Monitor wells MW-2, MW-3, and MW-4 were dry.

Laboratory analytical results of the groundwater samples collected exhibited the following findings:

- Benzene concentrations ranged from <0.00100 mg/L to 30.7 mg/L. Benzene concentrations exceeded the NMWQCC groundwater standard of 0.010 mg/L in groundwater samples collected from monitor wells MW-13 and MW-15.
- Toluene concentrations ranged from <0.00100 mg/L to <0.200 mg/L. The toluene concentration did not exceed the NMWQCC groundwater standard of 0.750 mg/L in any of the groundwater samples collected.
- Ethylbenzene concentrations ranged from < 0.00100 mg/L to 0.00230 mg/L Ethylbenzene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in any collected groundwater sample.
- Xylene concentrations ranged from < 0.00100 mg/L to 0.00350 mg/L. The xylene concentration did not exceed the NMWQCC groundwater standard of 0.620 mg/L in any of the groundwater samples collected.

Generally, dissolved-phase concentrations have declined or remained stable during the year 2013 with the most significant declines in down-gradient monitor well MW-8 indicating that the dissolved-phase plume may be contracting. Currently, the dissolved-phase groundwater plume is delineated.

PAH samples were not collected for this site in 2013 due to technician oversight. Regular PAH sampling will continue as scheduled in 2014.

2.5 Groundwater Monitor Well Installation Activities

Due to the presence of dissolved-phase petroleum hydrocarbon concentrations above NMWQCC groundwater standards from samples collected from groundwater monitoring wells MW-15 and MW-16, two (2) additional groundwater monitoring wells (MW-22 and MW-23) were installed in December of 2013.

Talon conducted the advancement, installation, and sampling of two (2), 2-inch diameter groundwater monitoring wells, designated as MW-22 an MW-23. The wells were advanced and installed utilizing air rotary techniques. The wells were installed and sampled to determine the horizontal extent of hydrocarbon impact to groundwater in the vicinity of the release area. The location of each groundwater monitoring well is presented on Figures 2d and 3d. The monitoring wells were installed under the direction of a licensed State of New Mexico well driller.

The placement of the monitoring wells was based upon historical groundwater analytical and historical fluid level measurement data collected from all monitor wells at the site. During boring advancement, soils samples were collected on ten (10) foot intervals utilizing a grab method, and were visually and texturally classified by the supervising project geologist. All

monitoring wells were constructed using flush-joint schedule 40, polyvinyl chloride (PVC) casing and factory slotted 0.010-inch screen. A sorted sand filter pack was placed around the screen from the bottom of the boring to approximately one (1) foot above the screened interval. Above the sand pack, a two (2) foot thick bentonite seal was set to prevent the migration of contaminants to the sampling zone from the surface, and the remainder of the well annulus was filled with cement. A steel protective vault was concreted in place to protect the well from damage and surface percolation. Well development was conducted prior to setting the bentonite seal, in order to settle the sand filter pack and to maximize the flow of groundwater into the well. Approximately 120 gallons of water were generated during monitoring well development activities.

2.5.1 Well Boring Soil Sample Collection

Soil samples were collected on December 17, 2013 at 90 feet bgs, and 110 feet bgs from the soil boring for groundwater monitoring well MW-22 and 23. Soil samples were collected by Talon personnel wearing clean nitrile gloves with disposal sampling tools.
The soil samples were containerized in laboratory provided sample containers, immediately placed on ice, and transported to Xenco Laboratories in Midland, Texas for BTEX analysis using EPA SW-846 Method 8021B and TPH analysis using Texas Method TX1005 extended to C_{35}. All analytical testing was performed on a standard turn-around basis.

2.5.2 Analytical Results

Analytical results indicate BTEX concentrations in soil samples collected from the soil borings for groundwater monitoring wells MW-22 and MW-23 to be below the respective NMWQCC groundwater standards. A summary of the groundwater monitoring well soil sample analytical results is presented on Table 3.

3 CONCLUSIONS AND RECOMMENDATIONS

The following section presents a summary of the four groundwater monitoring events conducted at the 8" Moore to Jal #2 site and provides recommendations for future corrective actions.

3.1 Summary of Findings

- The groundwater flow direction is to the southeast at an average gradient of 0.0040 feet per foot or 21.25 feet per mile.
- Groundwater levels at the subject site have exhibited a steady decline that appears to be associated with a regional trend of declining groundwater levels for the Ogallala Aquifer. Monitor wells MW-3, MW-4, and MW-2 went dry. Monitor wells MW-3 and MW-4 were replaced with 4 inch MW-3A and MW-4A and will be a regular part of the upcoming quarterly monitoring events.
- PSH has been observed in monitor wells MW-1, MW-5, MW-6, MW-7, and MW-9.
- Generally, PSH thicknesses have fluctuated from quarter to quarter during the year 2013 exhibiting no specific increasing or declining trend.
- In general, monitor wells have exhibited stable or declining concentrations of dissolved-phase contaminants. Down-gradient monitor wells MW-22 and MW-23 were drilled, and currently, the dissolved-phase plume is delineated.
- Approximately 26 bbls of crude oil was recovered during the year 2013 indicating that the PSH recovery system is performing its function.

3.2 Recommendations

Based upon the results of the quarterly groundwater monitoring and PSH recovery efforts, Talon proposes the following actions:

- Continue operation and maintenance of the skimmer/bladder pump and total fluids pumps recovery system. Monitor the system on a weekly basis to optimize PSH recovery efficiency.
- Add or reposition pumps as necessary to optimize PSH recovery and inhibit plume migration.
- Perform quarterly groundwater monitoring events in accordance with NMOCD directives.

APPENDIX A

Figures

Figure 1 - Site Plan – 12/30/2013

Figure 2a - Groundwater Gradient Map - 03/21/2013

Figure 2b - Groundwater Gradient Map - 06/20/2013

Figure 2c - Groundwater Gradient Map – 09/27/2013

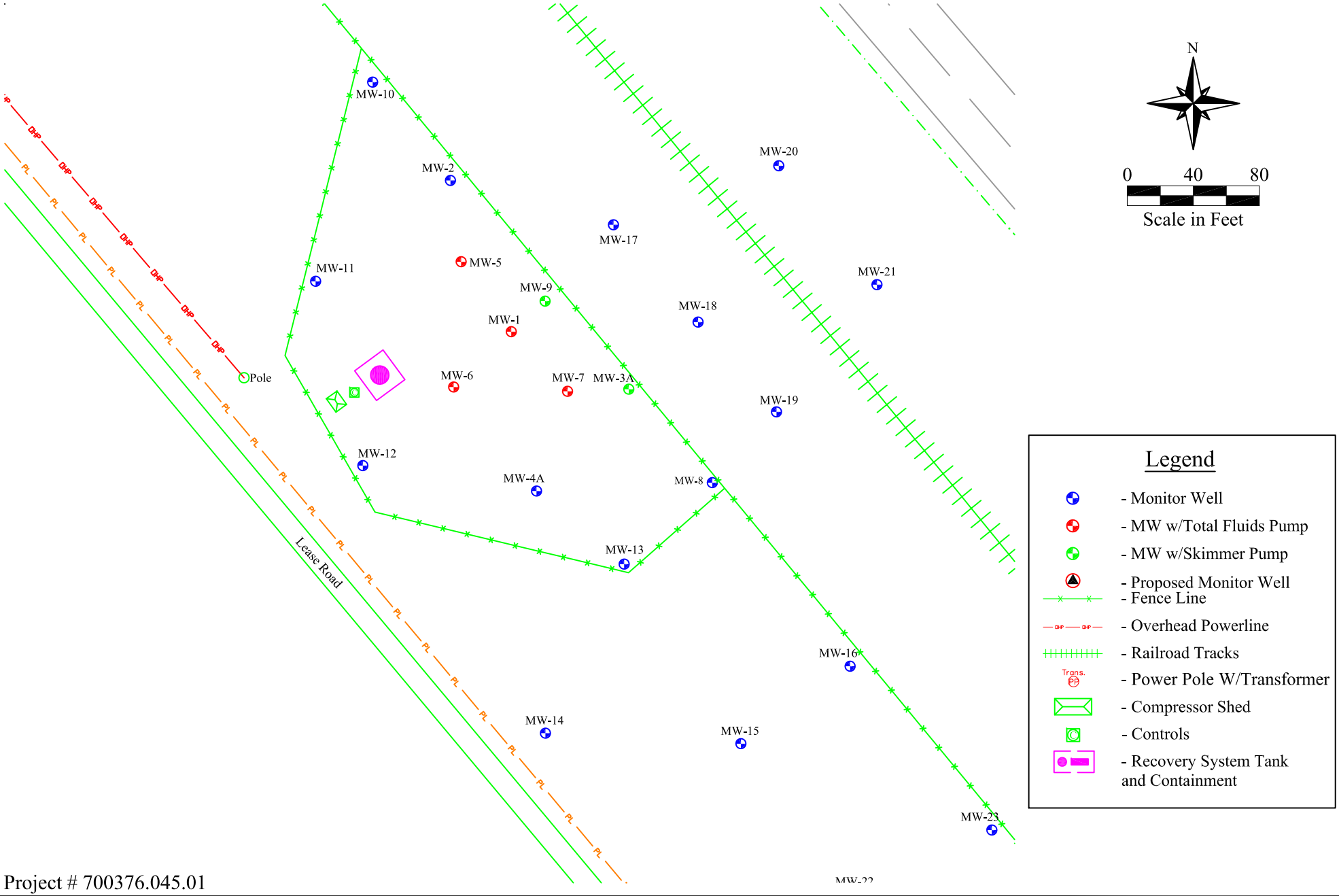
Figure 2d - Groundwater Gradient Map - 12/04/2013

Figure 3a - PSH Thickness & Groundwater Concentration Map - 03/21/2013

Figure 3b - PSH Thickness & Groundwater Concentration Map - 06/20/2013

Figure 3c - PSH Thickness & Groundwater Concentration Map – 09/27/2013

Figure 3d - PSH Thickness & Groundwater Concentration Map - 12/04/2013



Project # 700376.045.01

TALON LPE

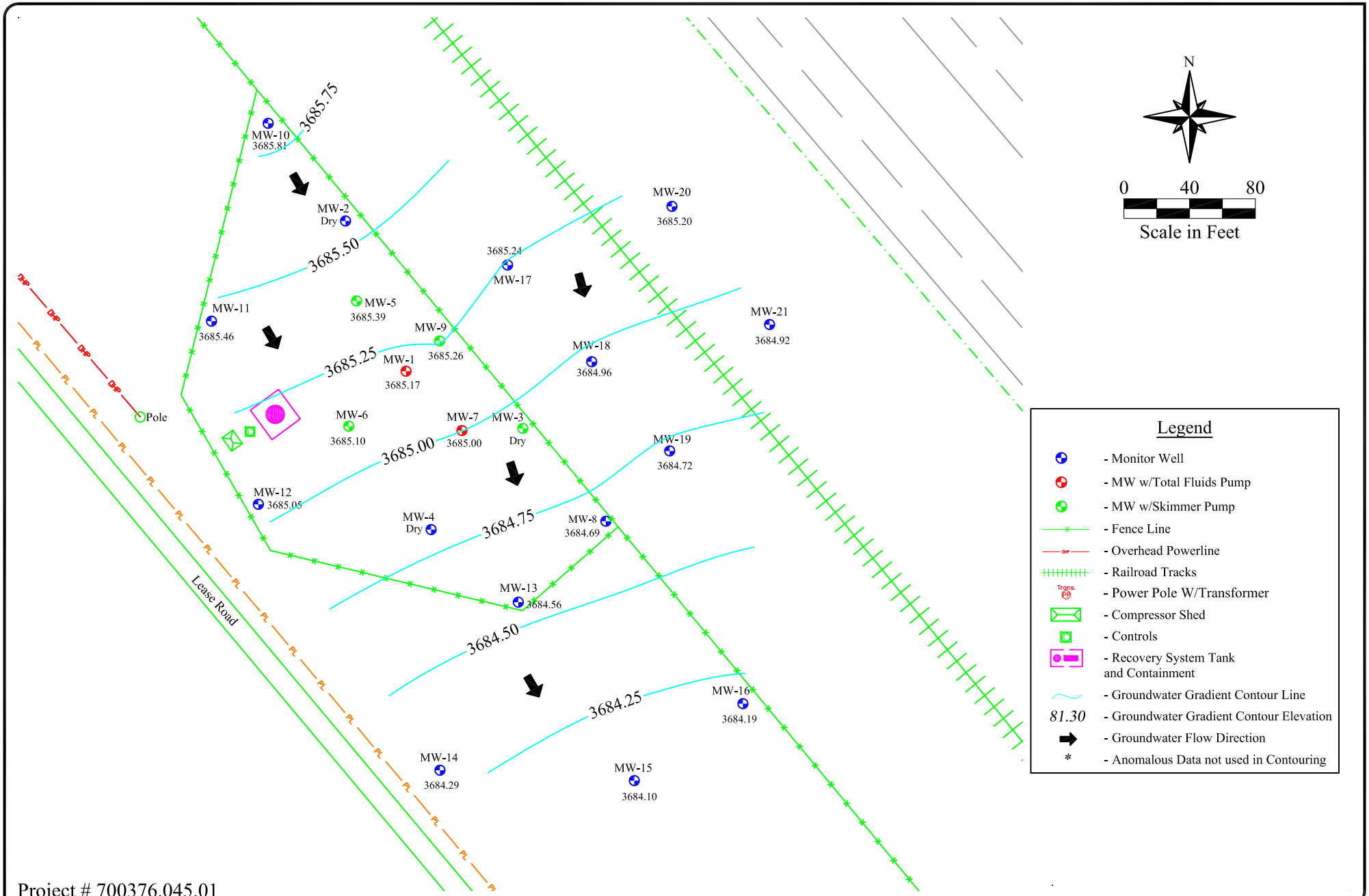
Date:	03/21/2013
Scale:	1" = 80'
Drawn By:	TJS

8" Moore to Jal # 2

SRS # 2002-10273, NMOCD REF. # AP-92

9.2 Miles SE of Lovington, NM, Lea County, New Mexico

Figure 1 - Site Plan



Project # 700376.045.01

TALON LPE

Date: 04/16/2013
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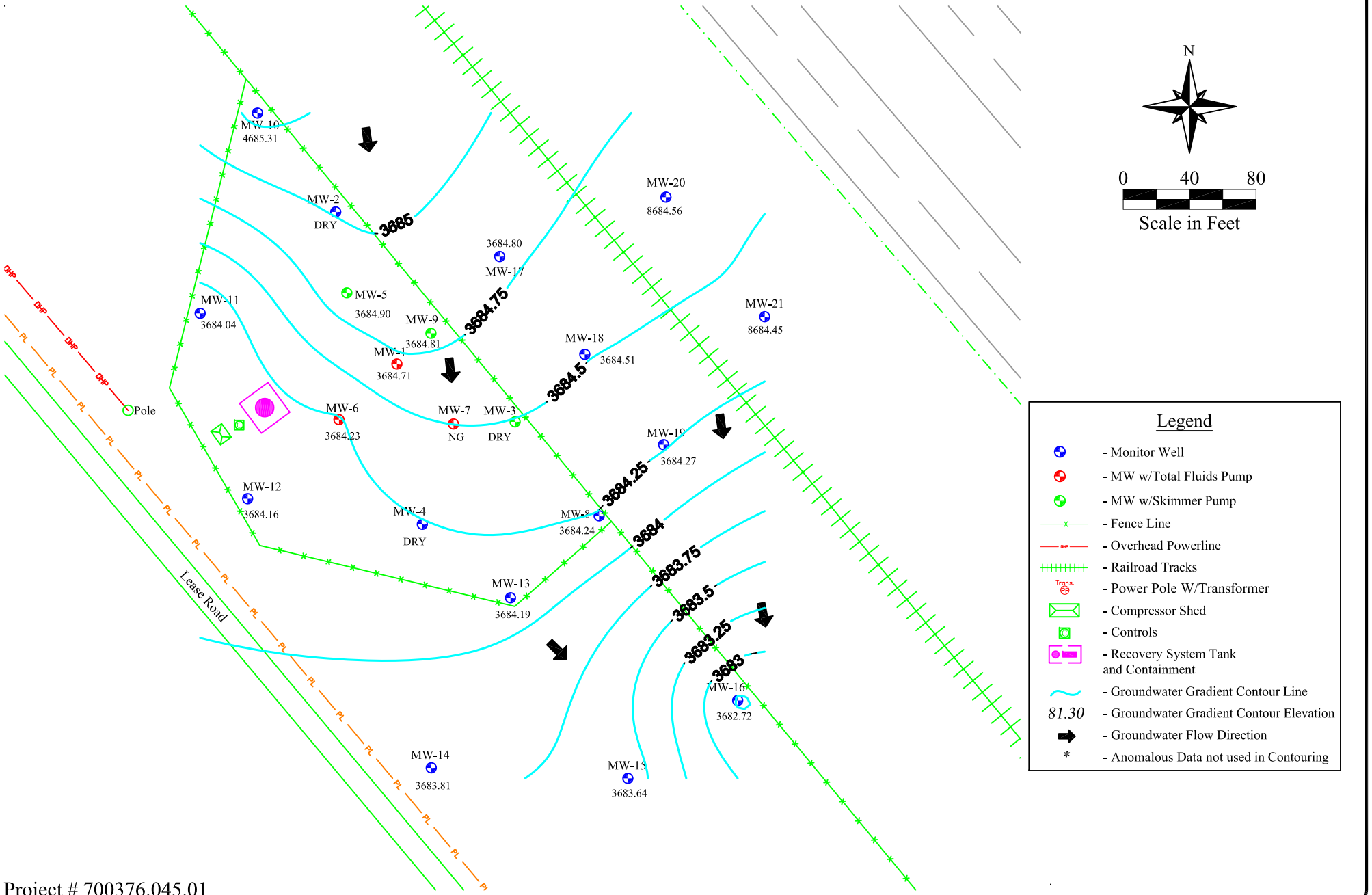
Drawn By: TJS

8" Moore to Jal # 2

SRS # 2002-10273, NMOCD REF. # AP-92
9.2 Miles SE of Lovington, NM, Lea County, New Mexico
Figure 2a - Groundwater Gradient Map - 03/12/2013



TALON LPE

Date: 07/03/2013
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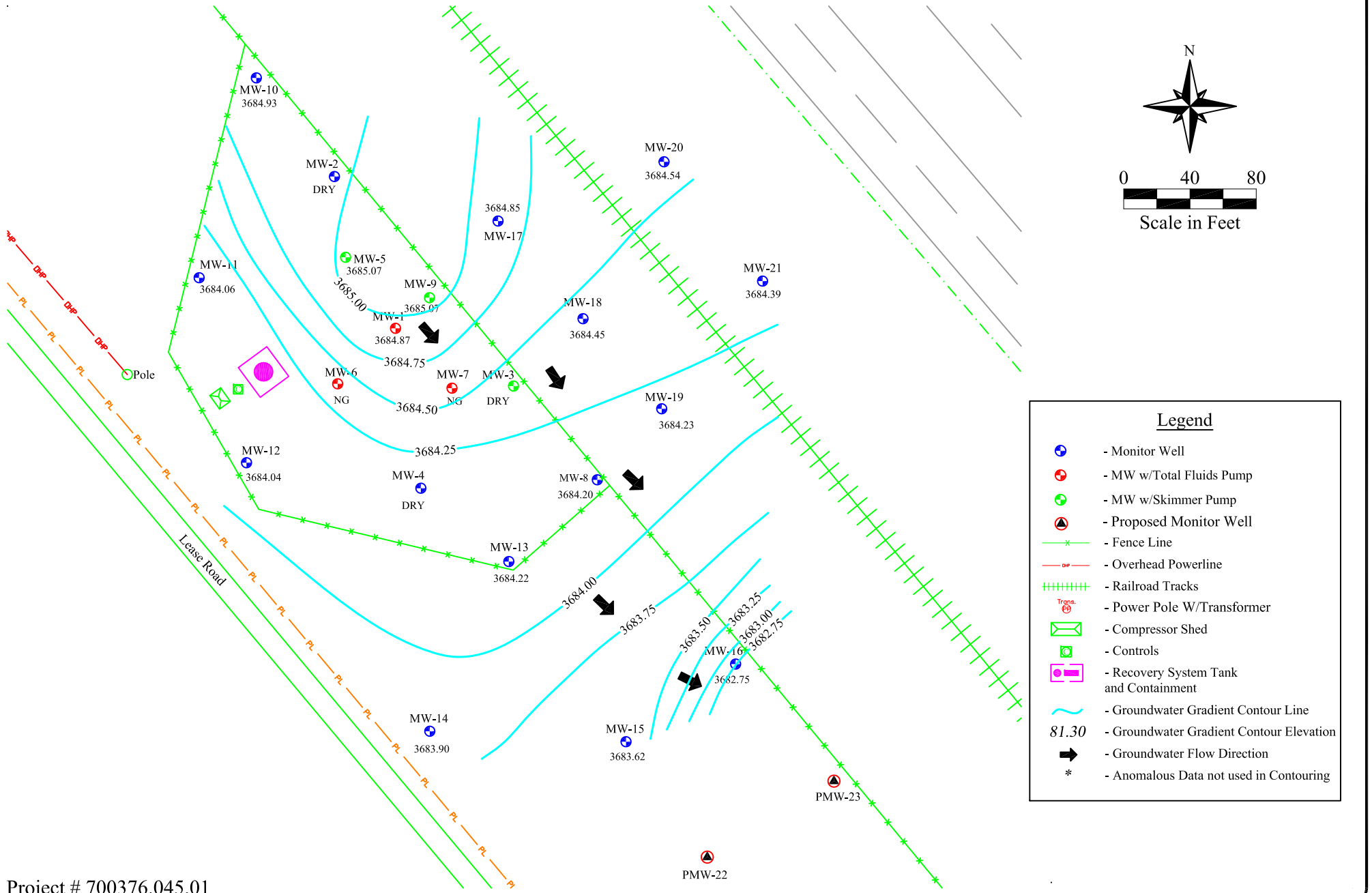
Drawn By: BCI

8" Moore to Jal # 2

SRS # 2002-10273, NMOCD REF. # AP-92
9.2 Miles SE of Lovington, NM, Lea County, New Mexico
Figure 2b - Groundwater Gradient Map - 06/20/2013



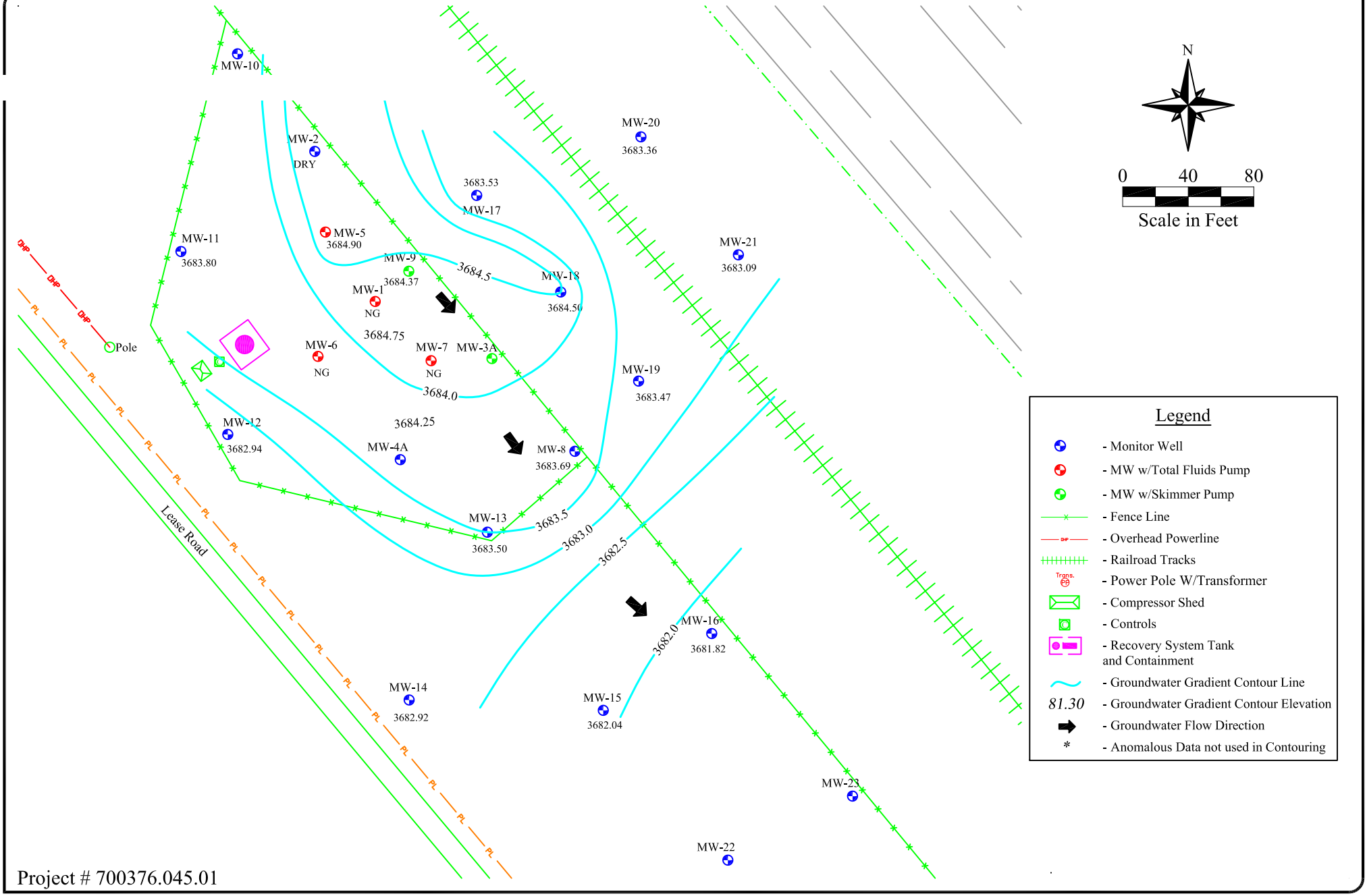
Project # 700376.045.01

TALON LPE

Date: 10/16/2013
Scale: 1" = 80'
Drawn By: TJS

8" Moore to Jal # 2

SRS # 2002-10273, NMOCD REF. # AP-92
9.2 Miles SE of Lovington, NM, Lea County, New Mexico
Figure 2c - Groundwater Gradient Map - 09/27/2013



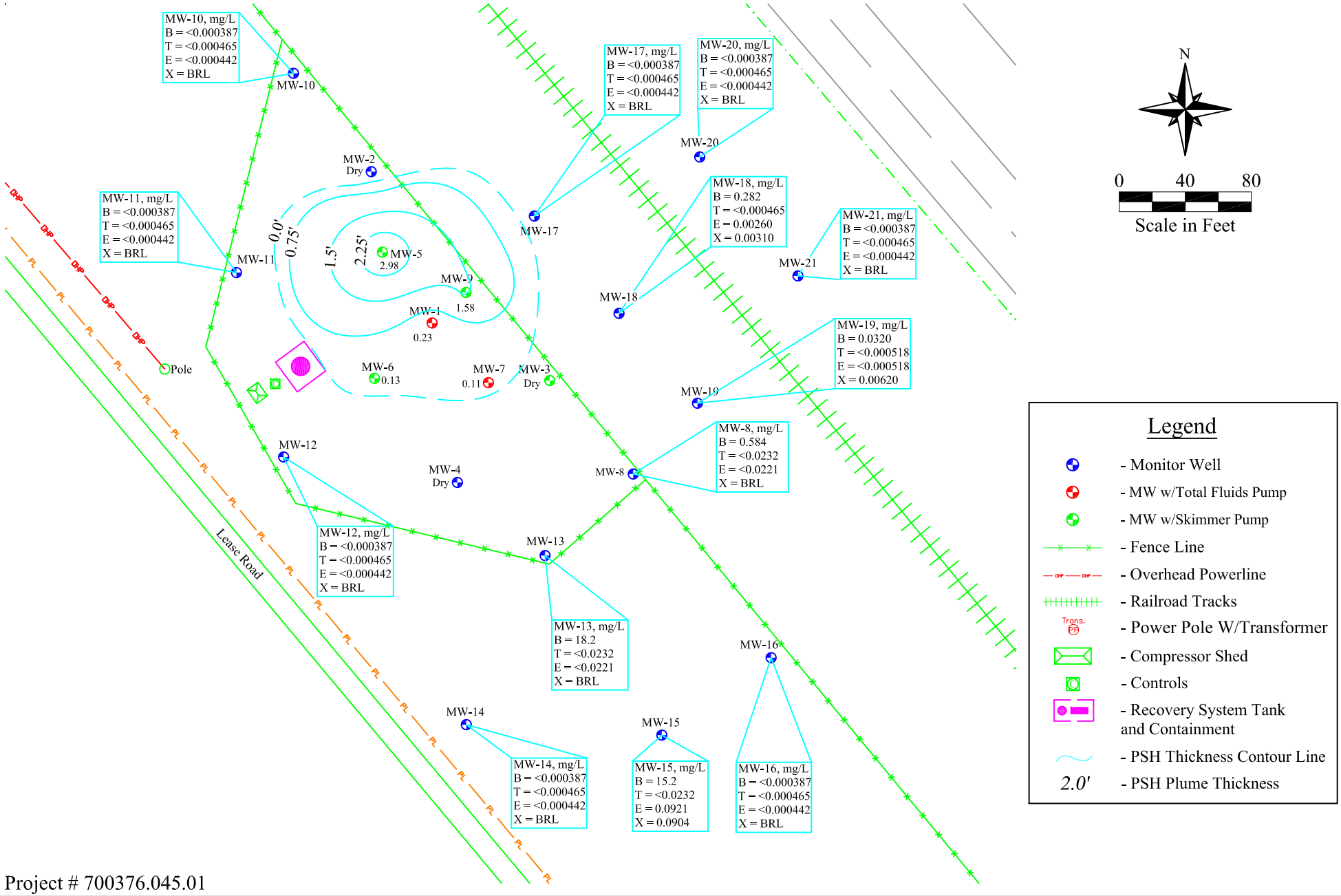
Project # 700376.045.01

TALON LPE

Date: 01/16/2014
Scale: 1" = 80'
Drawn By: TJS

8" Moore to Jal # 2

SRS # 2002-10273, NMOCD REF. # AP-92
9.2 Miles SE of Lovington, NM, Lea County, New Mexico
Figure 2d - Groundwater Gradient Map - 12/04/2013



Project # 700376.045.01

TALON LPE

Date: 04/16/2013

Scale: 1" = 80'

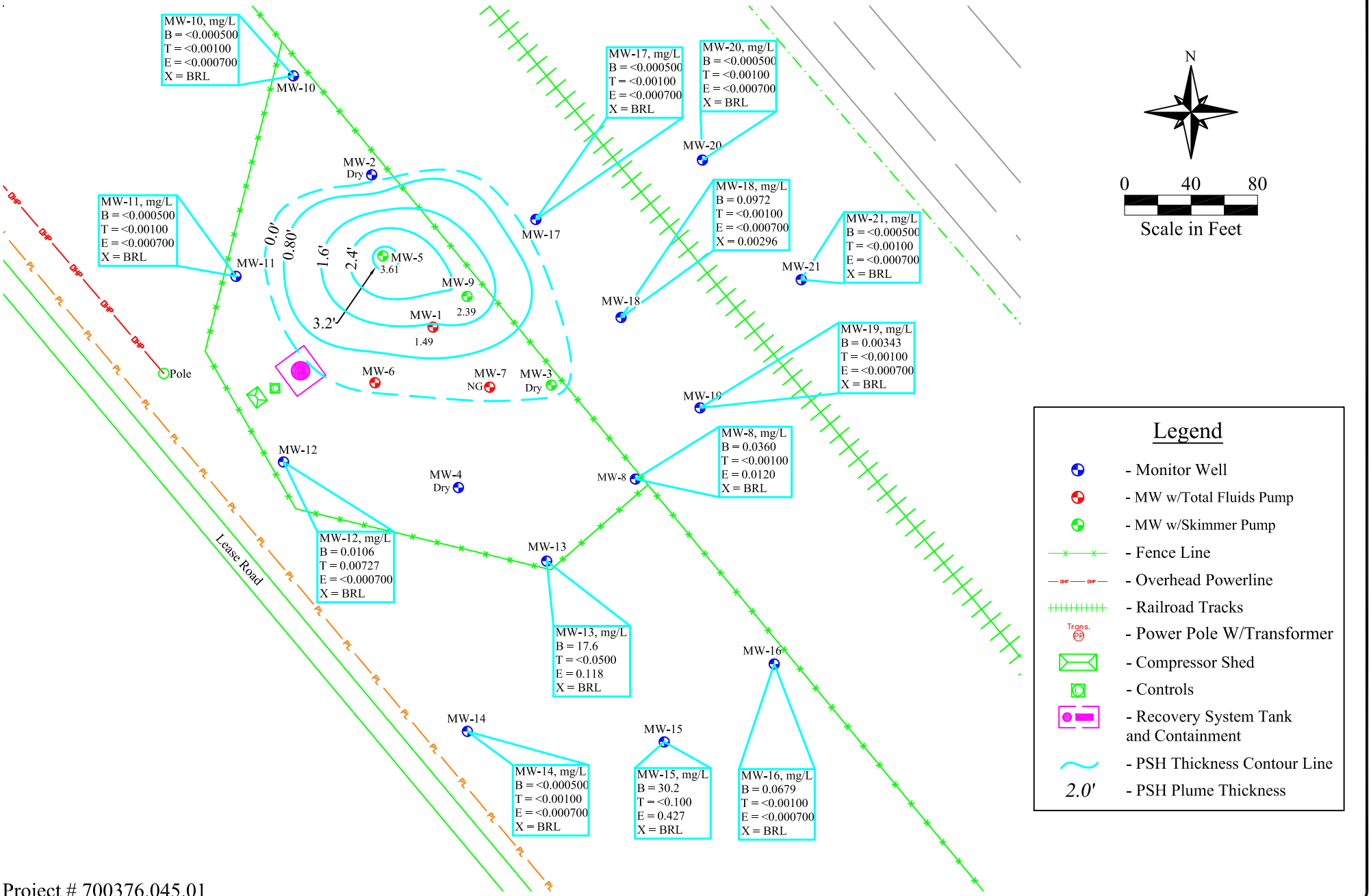
Drawn By: TJS

8" Moore to Jal # 2

SRS # 2002-10273, NMOCD REF. # AP-92

9.2 Miles SE of Lovington, NM, Lea County, New Mexico

Figure 3a - PSH Thickness and Groundwater Concentration Map, - 03/21/2013



Project # 700376.045.01

TALON LPE

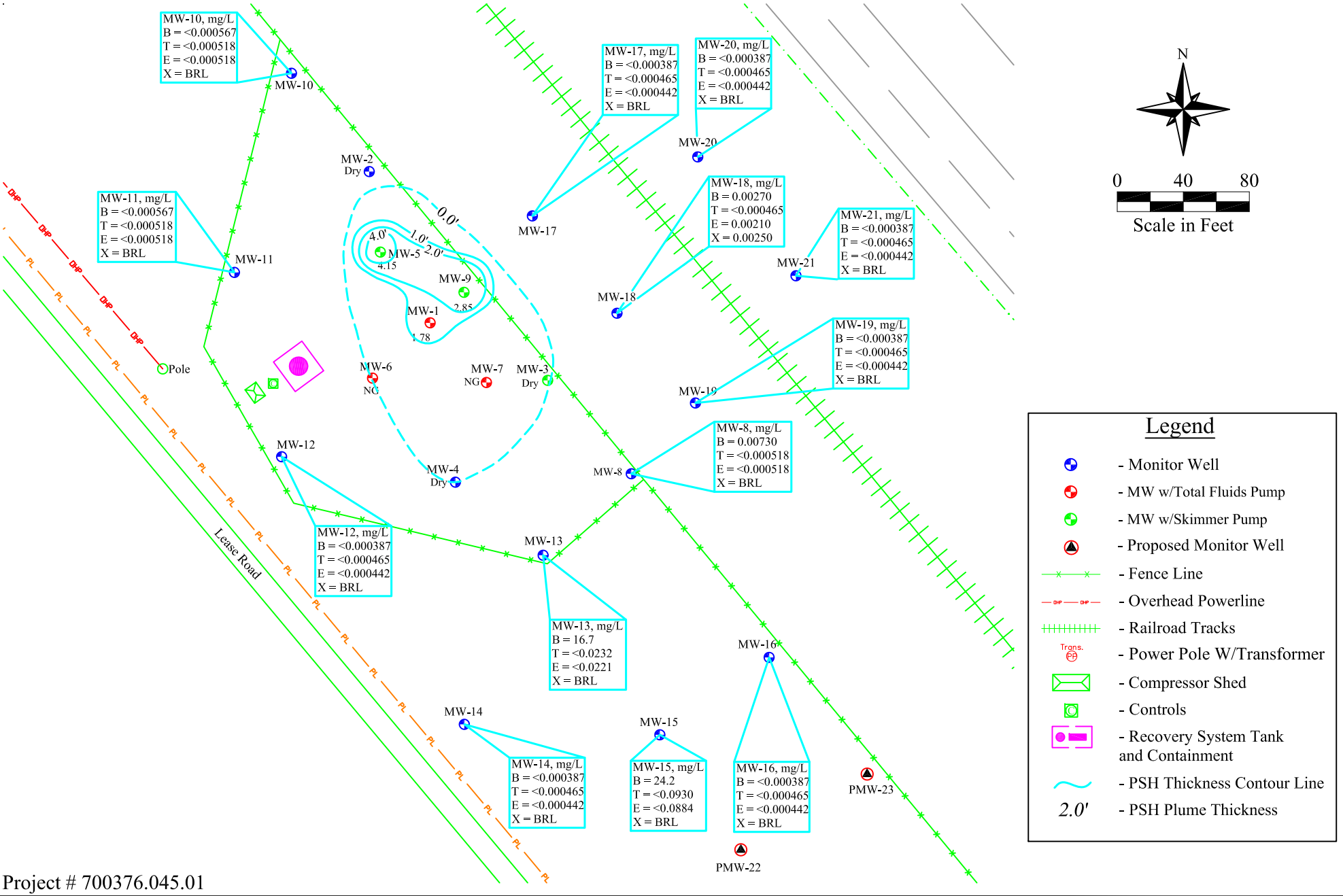
Date:	07/22/2013
Scale:	1" = 80'
Drawn By:	TJS

8" Moore to Jal # 2

SRS # 2002-10273, NMOCD REF. # AP-92

9.2 Miles SE of Lovington, NM, Lea County, New Mexico

Figure 3b - PSH Thickness and Groundwater Concentration Map, - 06/20/2013



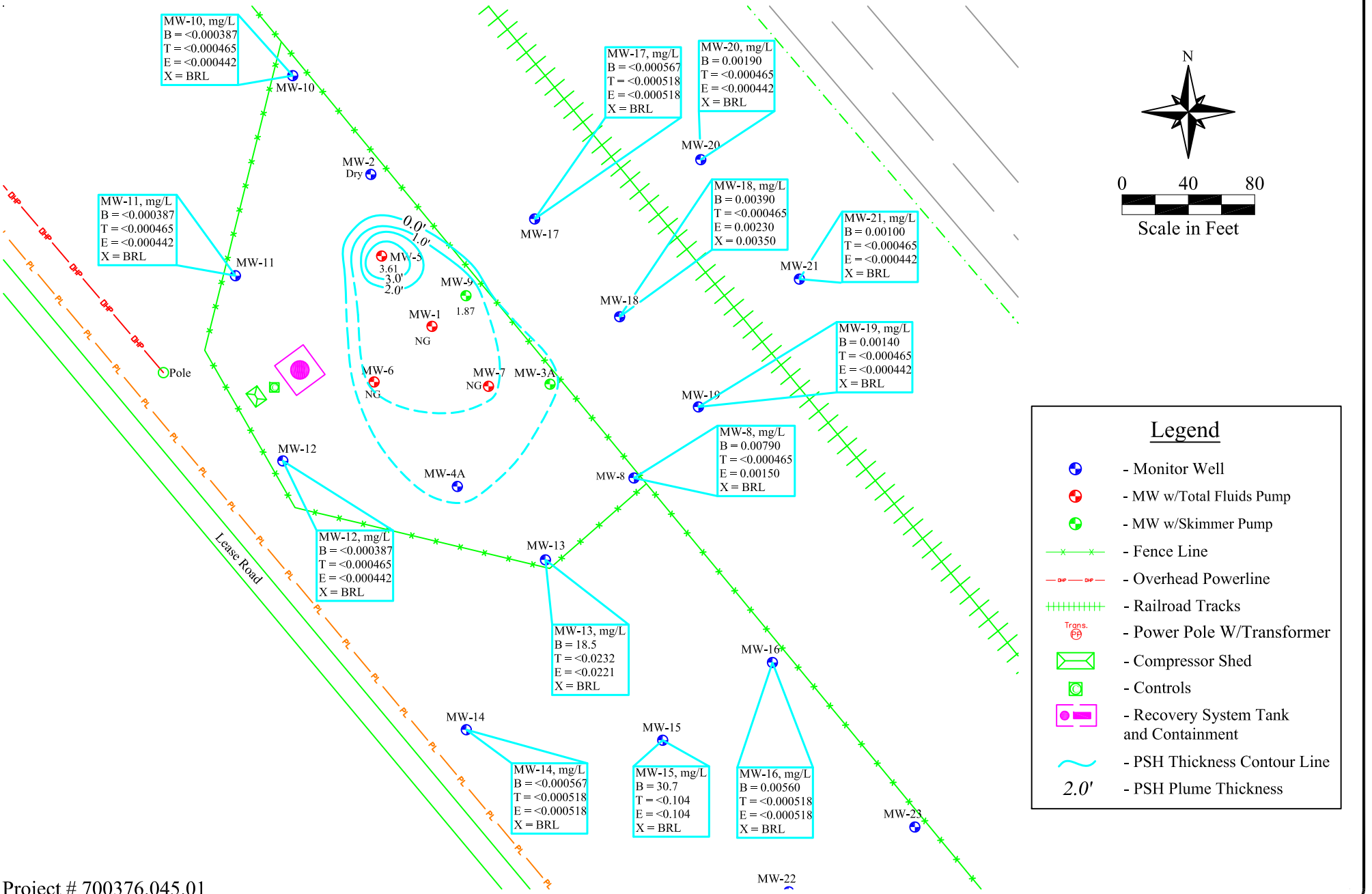
Project # 700376.045.01

TALON LPE

Date: 10/16/2013
Scale: 1" = 80'
Drawn By: TJS

8" Moore to Jal # 2

SRS # 2002-10273, NMOCD REF. # AP-92
9.2 Miles SE of Lovington, NM, Lea County, New Mexico
Figure 3c - PSH Thickness and Groundwater Concentration Map - 09/27/2013



Project # 700376.045.01

TALON LPE

Date: 01/16/2014

Scale: 1" = 80'

Drawn By: TJS

8" Moore to Jal # 2

SRS # 2002-10273, NMOCD REF. # AP-92

9.2 Miles SE of Lovington, NM, Lea County, New Mexico

Figure 3d - PSH Thickness and Groundwater Concentration Map, - 12/04/2013

APPENDIX B

Tables

Summary of Fluid Level Measurements
Moore to Jal #2
SRS #2002-10273

Well	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Depth to PSH (ft)	PSH Thickness (ft)	Corrected Groundwater Elevation (ft)
MW-1			Diameter: 4 in.	Screened Interval:	63 ft. to 83 ft.	TD: 83 ft.
	06/12/12	3773.35	87.29	86.85	0.44	3686.43
	09/26/12	3773.35	88.70	87.15	1.55	3685.94
	12/14/12	3773.35	88.09	87.80	0.29	3685.50
	03/12/13	3773.35	88.37	88.14	0.23	3685.17
	06/20/13	3773.35	89.88	88.39	1.49	3684.71
	09/27/13	3773.35	89.89	88.11	1.78	3684.95
	12/04/13	3773.35	NG	-	-	NG
MW-2			Diameter: 2 in.	Screened Interval:	63 ft. to 82.5 ft.	TD: 82.5 ft.
	06/12/12	3772.07	85.14	-	-	3686.93
	09/26/12	3772.07	NG	-	-	NG
	12/14/12	3772.07	86.21	-	-	3685.86
	03/12/13	3772.07	Dry	-	-	Dry
	06/20/13	3772.07	Dry	-	-	Dry
	09/27/13	3772.07	Dry	-	-	Dry
	12/04/13	3772.07	Dry	-	-	Dry
MW-3			Diameter: 2 in.	Screened Interval:	63 ft. to 83 ft.	TD: ft.
	06/12/12	3772.86	Dry	-	-	Dry
	09/26/12	3772.86	Dry	-	-	Dry
	12/14/12	3772.86	Dry	-	-	Dry
	03/12/13	3772.86	Dry	-	-	Dry
	06/20/13	3772.86	Dry	-	-	Dry
	09/27/13	3772.86	Dry	-	-	Dry
	12/04/13	3772.86	Dry	-	-	Dry
	12/10/13	3772.86	P&A	-	-	P&A
MW-3A			Diameter: 4 in.	Screened Interval:	ft. to ft.	TD: 112 ft.
	01/09/14		90.52	-	-	
MW-4			Diameter: 2 in.	Screened Interval:	67 ft. to 87 ft.	TD: 87 ft.
	06/12/12	3773.76	87.41	87.23	0.18	3686.50
	09/26/12	3773.76	87.69	87.60	0.09	3686.15
	12/14/12	3773.76	Dry	-	-	Dry
	03/12/13	3773.76	Dry	-	-	Dry
	06/20/13	3773.76	Dry	-	-	Dry
	09/27/13	3773.76	Dry	-	-	Dry
	12/04/13	3773.76	Dry	-	-	Dry
	12/10/13	3773.76	P&A	-	-	P&A
MW-4A			Diameter: 4 in.	Screened Interval:	ft. to ft.	TD: 114 ft.
	01/09/14		91.47	-	-	
MW-5			Diameter: 4 in.	Screened Interval:	60 ft. to 100 ft.	TD: 100 ft.
	06/12/12	3772.08	90.11	84.51	5.60	3686.65
	09/26/12	3772.08	90.92	84.94	5.98	3686.15
	12/14/12	3772.08	87.91	86.21	1.70	3685.59
	03/12/13	3772.08	89.18	86.20	2.98	3685.39
	06/20/13	3772.08	90.19	86.58	3.61	3684.90
	09/27/13	3772.08	90.29	86.14	4.15	3685.26
	12/04/13	3772.08	90.19	86.58	3.61	3684.90
MW-6			Diameter: 4 in.	Screened Interval:	60 ft. to 100 ft.	TD: 100 ft.
	06/12/12	3772.99	91.48	85.61	5.87	3686.41
	09/29/12	3772.99	92.13	86.05	6.08	3685.94
	12/14/12	3772.99	89.99	86.95	3.04	3685.54
	03/12/13	3772.99	88.00	87.87	0.13	3685.10
	06/20/13	3772.99	88.76	-	-	3684.23
	09/27/13	3772.99	NG	-	-	NG
	12/04/13	3772.99	NG	-	-	NG

Summary of Fluid Level Measurements
Moore to Jal #2
SRS #2002-10273

Well	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Depth to PSH (ft)	PSH Thickness (ft)	Corrected Groundwater Elevation (ft)
MW-7			Diameter: 4 in.	Screened Interval:	60 ft. to 100 ft.	TD: 100 ft.
	06/12/12	3772.92	88.61	86.25	2.36	3686.28
	09/26/12	3772.92	92.04	86.13	5.91	3685.81
	12/14/12	3772.92	89.43	87.26	2.17	3685.30
	03/12/13	3772.92	88.01	87.90	0.11	3685.00
	06/20/13	3772.92	NG	-	-	NG
	09/27/13	3772.92	NG	-	-	NG
	12/04/13	3772.92	NG	-	-	NG
MW-8			Diameter: 4 in.	Screened Interval:	64 ft. to 104 ft.	TD: 105 ft.
	06/12/12	3773.80	88.80	-	-	3685.00
	09/26/12	3773.80	88.41	-	-	3685.39
	12/14/12	3773.80	88.78	-	-	3685.02
	03/12/13	3773.80	89.11	-	-	3684.69
	06/20/13	3773.80	89.56	-	-	3684.24
	09/27/13	3773.80	89.60	-	-	3684.20
	12/04/13	3773.80	90.11	-	-	3683.69
MW-9			Diameter: 4 in.	Screened Interval:	60 ft. to 100 ft.	TD: 100 ft.
	06/12/12	3771.79	89.81	84.38	5.43	3686.51
	09/26/12	3771.79	90.43	84.80	5.63	3686.06
	12/14/12	3771.79	86.54	86.10	0.44	3685.62
	03/12/13	3771.79	87.85	86.27	1.58	3685.26
	06/20/13	3771.79	88.98	86.59	2.39	3684.81
	09/27/13	3771.79	88.97	86.12	2.85	3685.20
	12/04/13	3771.79	88.98	87.11	1.87	3684.37
MW-10			Diameter: 4 in.	Screened Interval:	61 ft. to 101 ft.	TD: 101 ft.
	06/12/12	3771.90	84.69	-	-	3687.21
	09/26/12	3771.90	84.30	-	-	3687.60
	12/14/12	3771.90	85.40	-	-	3686.50
	03/12/13	3771.90	86.09	-	-	3685.81
	06/20/13	3771.90	86.59	-	-	3685.31
	09/27/13	3771.90	86.97	-	-	3684.93
	12/04/13	3771.90	87.91	-	-	3683.99
MW-11			Diameter: 4 in.	Screened Interval:	65 ft. to 105 ft.	TD: 105 ft.
	06/12/12	3772.97	86.12	-	-	3686.85
	09/26/12	3772.97	86.75	-	-	3686.22
	03/12/13	3772.97	87.51	-	-	3685.46
	06/20/13	3772.97	88.93	-	-	3684.04
	09/27/13	3772.97	88.91	-	-	3684.06
	12/04/13	3772.97	89.17	-	-	3683.80
MW-12			Diameter: 4 in.	Screened Interval:	65 ft. to 105 ft.	TD: 106 ft.
	06/12/12	3773.80	87.36	-	-	3686.44
	09/26/12	3773.80	88.00	-	-	3685.80
	12/14/12	3773.80	88.41	-	-	3685.39
	03/12/13	3773.80	88.75	-	-	3685.05
	06/20/13	3773.80	89.64	-	-	3684.16
	09/27/13	3773.80	89.76	-	-	3684.04
	12/04/13	3773.80	90.86	-	-	3682.94
MW-13			Diameter: 4 in.	Screened Interval:	65 ft. to 105 ft.	TD: 105 ft.
	06/12/12	3774.36	88.43	-	-	3685.93
	09/26/12	3774.36	89.08	-	-	3685.28
	12/14/12	3774.36	89.45	-	-	3684.91
	03/12/13	3774.36	89.80	-	-	3684.56
	06/20/13	3774.36	90.25	-	-	3684.11
	09/27/13	3774.36	90.14	-	-	3684.22
	12/04/13	3774.36	90.86	-	-	3683.50

Summary of Fluid Level Measurements
Moore to Jal #2
SRS #2002-10273

Well	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Depth to PSH (ft)	PSH Thickness (ft)	Corrected Groundwater Elevation (ft)
MW-14			Diameter: 4 in.	Screened Interval:	66 ft. to 106 ft.	TD: 106 ft.
	06/12/12	3774.40	88.73	-	-	3685.67
	09/26/12	3774.40	89.45	-	-	3684.95
	12/14/12	3774.40	89.90	-	-	3684.50
	03/12/13	3774.40	90.11	-	-	3684.29
	06/20/13	3774.40	90.59	-	-	3683.81
	09/27/13	3774.40	90.50	-	-	3683.90
	12/04/13	3774.40	91.48	-	-	3682.92
MW-15			Diameter: 4 in.	Screened Interval:	67 ft. to 107 ft.	TD: 107 ft.
	06/12/12	3774.03	88.59	-	-	3685.44
	09/26/12	3774.03	89.26	-	-	3684.77
	12/14/12	3774.03	89.61	-	-	3684.42
	03/12/13	3774.03	89.93	-	-	3684.10
	06/20/13	3774.03	90.39	-	-	3683.64
	09/27/13	3774.03	90.41	-	-	3683.62
	12/04/13	3774.03	91.99	-	-	3682.04
MW-16			Diameter: 4 in.	Screened Interval:	67 ft. to 107 ft.	TD: 107 ft.
	06/12/12	3773.95	88.43	-	-	3685.52
	09/26/12	3773.95	89.09	-	-	3684.86
	12/14/12	3773.95	84.50	-	-	3689.45
	03/12/13	3773.95	89.76	-	-	3684.19
	06/20/13	3773.95	91.23	-	-	3682.72
	09/27/13	3773.95	91.20	-	-	3682.75
	12/04/13	3773.95	92.13	-	-	3681.82
MW-17			Diameter: 4 in.	Screened Interval:	ft. to ft.	TD: ft.
	06/12/12	3771.29	85.82	-	-	3685.47
	09/26/12	3771.29	85.33	-	-	3685.96
	12/14/12	3771.29	85.68	-	-	3685.61
	03/12/13	3771.29	86.05	-	-	3685.24
	06/20/13	3771.29	86.49	-	-	3684.80
	09/27/13	3771.29	86.44	-	-	3684.85
	12/04/13	3771.29	87.76	-	-	3683.53
MW-18			Diameter: 4 in.	Screened Interval:	ft. to ft.	TD: ft.
	06/12/12	3772.41	86.26	-	-	3686.15
	09/26/12	3772.41	86.75	-	-	3685.66
	12/14/12	3772.41	87.08	-	-	3685.33
	03/12/13	3772.41	87.45	-	-	3684.96
	06/20/13	3772.41	87.90	-	-	3684.51
	09/27/13	3772.41	87.96	-	-	3684.45
	12/04/13	3772.41	87.91	-	-	3684.50
MW-19			Diameter: 4 in.	Screened Interval:	ft. to ft.	TD: ft.
	06/12/12	3773.63	87.71	-	-	3685.92
	09/26/12	3773.63	88.24	-	-	3685.39
	12/14/12	3773.63	88.57	-	-	3685.06
	03/12/13	3773.63	88.91	-	-	3684.72
	06/20/13	3773.63	89.36	-	-	3684.27
	09/27/13	3773.63	89.40	-	-	3684.23
	12/04/13	3773.63	90.16	-	-	3683.47
MW-20			Diameter: 4 in.	Screened Interval:	ft. to ft.	TD: ft.
	06/12/12	3770.92	84.58	-	-	3686.34
	09/26/12	3770.92	85.00	-	-	3685.92
	12/14/12	3770.92	85.37	-	-	3685.55
	03/12/13	3770.92	85.72	-	-	3685.20
	06/20/13	3770.92	86.36	-	-	3684.56
	09/27/13	3770.92	86.38	-	-	3684.54
	12/04/13	3770.92	87.56	-	-	3683.36

Summary of Fluid Level Measurements
Moore to Jal #2
SRS #2002-10273

Well	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Depth to PSH (ft)	PSH Thickness (ft)	Corrected Groundwater Elevation (ft)
MW-21			Diameter: 4 in.	Screened Interval: ____ ft. to ____ ft.		TD: ____ ft.
	06/12/12	3773.30	87.28	-	-	3686.02
	09/26/12	3773.30	87.67	-	-	3685.63
	12/14/12	3773.30	88.02	-	-	3685.28
	03/12/13	3773.30	88.38	-	-	3684.92
	06/20/13	3773.30	88.85	-	-	3684.45
	09/27/13	3773.30	88.91	-	-	3684.39
	12/04/13	3773.30	90.21	-	-	3683.09
MW-22			Diameter: 2 in.	Screened Interval: ____ ft. to ____ ft.		TD: 110 ft.
	01/09/14		91.04	-	-	
MW-23			Diameter: 2 in.	Screened Interval: ____ ft. to ____ ft.		TD: 114 ft.
	01/09/14		91.91	-	-	

Specific Gravity: 0.835

NG - Not Gauged
NSch - Not scheduled to be gauged
Block - Well blocked/obstructed
Locate - Can not locate/find well
Dry - Well is dry
P&A - Plug and Abandon
WD - Well Destroyed

Summary of Groundwater Analytical Data
Moore to Jal #2
SRS #2002-10273

Sample Designation	Date Sampled	Concentration (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Xylenes, Total	BTEX	MTBE	Notes
MW-1	06/12/12	-	-	-	-	-	-	-	A
	09/26/12	-	-	-	-	-	-	-	A
	09/27/12	-	-	-	-	-	-	-	A
	12/14/12	-	-	-	-	-	-	-	A
	03/21/13	-	-	-	-	-	-	-	A
	06/20/13	-	-	-	-	-	-	-	A
	09/27/13	-	-	-	-	-	-	-	A
	12/30/13	-	-	-	-	-	-	-	A
MW-2	06/13/12	<0.00186	<0.00174	<0.00163	0.00550	-	-	-	-
	09/26/12	-	-	-	-	-	-	-	I
	12/14/12	-	-	-	-	-	-	-	I
	03/12/13	-	-	-	-	-	-	-	I
	06/20/13	-	-	-	-	-	-	-	I
	09/27/13	-	-	-	-	-	-	-	I
	12/30/13	-	-	-	-	-	-	-	I
MW-3	06/12/12	-	-	-	-	-	-	-	I
	09/26/12	-	-	-	-	-	-	-	I
	12/14/12	-	-	-	-	-	-	-	I
	03/12/13	-	-	-	-	-	-	-	I
	06/20/13	-	-	-	-	-	-	-	I
	09/27/13	-	-	-	-	-	-	-	I
	12/30/13	-	-	-	-	-	-	-	I
MW-4	06/12/12	-	-	-	-	-	-	-	A
	09/26/12	-	-	-	-	-	-	-	A
	12/14/12	-	-	-	-	-	-	-	I
	03/12/13	-	-	-	-	-	-	-	I
	06/20/13	-	-	-	-	-	-	-	I
	09/27/13	-	-	-	-	-	-	-	I
	12/30/13	-	-	-	-	-	-	-	I

Summary of Groundwater Analytical Data
Moore to Jal #2
SRS #2002-10273

Sample Designation	Date Sampled	Concentration (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Xylenes, Total	BTEX	MTBE	Notes
MW-5	06/12/12	-	-	-	-	-	-	-	A
	09/26/12	-	-	-	-	-	-	-	A
	12/14/12	-	-	-	-	-	-	-	A
	03/12/13	-	-	-	-	-	-	-	A
	06/20/13	-	-	-	-	-	-	-	A
	09/27/13	-	-	-	-	-	-	-	A
	12/30/13	-	-	-	-	-	-	-	A
MW-6	06/12/12	-	-	-	-	-	-	-	A
	09/26/12	-	-	-	-	-	-	-	A
	12/14/12	-	-	-	-	-	-	-	A
	03/12/13	-	-	-	-	-	-	-	A
	06/20/13	-	-	-	-	-	-	-	A
	09/27/13	-	-	-	-	-	-	-	A
	12/30/13	-	-	-	-	-	-	-	A
MW-7	06/12/12	-	-	-	-	-	-	-	A
	09/26/12	-	-	-	-	-	-	-	A
	12/14/12	-	-	-	-	-	-	-	A
	03/12/13	-	-	-	-	-	-	-	A
	06/20/13	-	-	-	-	-	-	-	A
	09/27/13	-	-	-	-	-	-	-	A
	12/30/13	-	-	-	-	-	-	-	A
MW-8	06/13/12	6.18	<0.0347	0.380	BRL	-	-	-	-
	09/27/12	3.50	<0.0174	0.401	BRL	-	-	<0.0477	-
	12/14/12	0.210	<0.000347	0.0317	0.00200	-	-	-	-
	03/21/13	0.584	<0.0232	<0.0221	BRL	-	-	-	-
	06/20/13	0.0360	<0.00100	0.0120	-	<0.000700	0.0480	-	-
	10/09/13	0.00730	<0.000518	<0.000518	BRL	-	-	-	-
	12/30/13	0.00790	<0.000465	0.00150	BRL	-	-	-	-

Summary of Groundwater Analytical Data
Moore to Jal #2
SRS #2002-10273

Sample Designation	Date Sampled	Concentration (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Xylenes, Total	BTEX	MTBE	Notes
MW-9	06/12/12	-	-	-	-	-	-	-	A
	09/26/12	-	-	-	-	-	-	-	A
	12/14/12	-	-	-	-	-	-	-	A
	03/12/13	-	-	-	-	-	-	-	A
	06/20/13	-	-	-	-	-	-	-	A
	09/27/13	-	-	-	-	-	-	-	A
	12/30/13	-	-	-	-	-	-	-	A
MW-10	06/12/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-	-
	09/26/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954	-
	12/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-	-
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
	06/20/13	<0.000500	<0.00100	<0.000700	-	<0.000700	U	-	-
	09/27/13	<0.000567	<0.000518	<0.000518	BRL	-	-	-	-
	12/30/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
MW-11	06/12/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-	-
	09/26/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954	-
	12/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-	-
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
	06/20/13	<0.000500	<0.00100	<0.000700	-	<0.000700	U	-	-
	09/27/13	<0.000567	<0.000518	<0.000518	BRL	-	-	-	-
	12/30/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
MW-12	06/12/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-	-
	09/26/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954	-
	12/14/12	<0.000310	0.00140	<0.000291	0.00100	-	-	-	-
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
	06/20/13	0.0106	0.00727	<0.000700	-	<0.000700	0.0179	-	-
	09/27/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
	12/30/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-

Summary of Groundwater Analytical Data
Moore to Jal #2
SRS #2002-10273

Sample Designation	Date Sampled	Concentration (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Xylenes, Total	BTEX	MTBE	Notes
MW-13	06/13/12	33.6	<0.0694	<0.0652	0.286	-	-	-	-
	09/27/12	17.1	<0.0174	0.102	0.187	-	-	<0.0477	-
	12/14/12	10.7	<0.0130	0.0690	BRL	-	-	-	-
	03/21/13	18.2	<0.0232	<0.0221	BRL	-	-	-	-
	06/20/13	17.6	<0.0500	0.118	-	<0.0350	17.7	-	-
	09/27/13	16.7	<0.0232	<0.0221	BRL	-	-	-	-
	12/30/13	18.5	<0.0232	<0.0221	BRL	-	-	-	-
MW-14	06/12/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-	-
	09/27/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954	-
	12/14/12	<0.000310	<0.000259	<0.000291	BRL	-	-	-	-
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
	06/20/13	<0.000500	<0.00100	<0.000700	-	<0.000700	U	-	-
	09/27/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
	12/30/13	<0.000567	<0.000518	<0.000518	BRL	-	-	-	-
MW-15	06/13/12	3.14	<0.0259	<0.0291	BRL	-	-	-	-
	09/27/12	7.89	<0.0174	0.141	0.113	-	-	<0.0477	-
	12/14/12	9.63	<0.0130	0.122	0.279	-	-	-	-
	03/21/13	15.2	<0.0232	0.0921	0.0904	-	-	-	-
	06/20/13	30.2	<0.100	0.427	-	<0.0700	30.6	-	-
	09/27/13	24.2	<0.0930	<0.0884	BRL	-	-	-	-
	12/30/13	30.7	<0.104	<0.104	BRL	-	-	-	-
MW-16	06/13/12	0.0162	<0.000259	<0.000291	BRL	-	-	-	-
	09/27/12	0.0114	<0.000347	<0.000326	BRL	-	-	<0.000954	-
	12/14/12	0.0546	<0.000259	<0.000291	0.00420	-	-	-	-
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
	06/20/13	0.0679	<0.00100	<0.000700	-	0.00185	0.0698	-	-
	09/27/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
	12/30/13	0.00560	<0.000518	<0.000518	BRL	-	-	-	-

Summary of Groundwater Analytical Data
Moore to Jal #2
SRS #2002-10273

Sample Designation	Date Sampled	Concentration (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Xylenes, Total	BTEX	MTBE	Notes
MW-17	06/12/12	<0.000310	<0.000259	<0.000291	BRL	-	-	-	-
	09/27/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954	-
	12/14/12	<0.000310	0.00120	<0.000291	0.00240	-	-	-	-
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
	06/20/13	<0.000500	<0.00100	<0.000700	-	<0.000700	U	-	-
	09/27/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
	12/30/13	<0.000567	<0.000518	<0.000518	BRL	-	-	-	-
MW-18	06/12/12	0.0696	<0.000347	<0.000326	0.00750	-	-	-	-
	09/27/12	0.308	<0.000347	<0.000326	0.0226	-	-	<0.000954	-
	12/14/12	0.0465	<0.000259	<0.000291	0.00410	-	-	-	-
	03/21/13	0.282	<0.000465	0.00260	0.00310	-	-	-	-
	06/20/13	0.0972	<0.00100	<0.000700	-	0.00296	0.100	-	-
	09/27/13	0.00270	<0.000465	0.00210	0.00250	-	-	-	-
	12/31/13	0.00390	<0.000465	0.00230	0.00350	-	-	-	-
MW-19	06/12/12	0.0393	<0.000347	<0.000326	0.00170	-	-	-	-
	09/27/12	0.0501	<0.000259	<0.000291	0.00260	-	-	<0.000331	-
	12/14/12	0.00980	<0.000259	<0.000291	BRL	-	-	-	-
	03/21/13	0.0320	<0.000518	<0.000518	0.00620	-	-	-	-
	06/20/13	0.00343	<0.00100	<0.000700	-	<0.000700	0.00343	-	-
	09/27/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
	12/31/13	0.00140	<0.000465	<0.000442	BRL	-	-	-	-
MW-20	06/12/12	0.0121	<0.000347	<0.000326	BRL	-	-	-	-
	09/26/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954	-
	12/14/12	<0.000310	<0.000259	<0.000291	BRL	-	-	-	-
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
	06/20/13	<0.000500	<0.00100	<0.000700	-	<0.000700	U	-	-
	09/27/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
	12/31/13	0.00190	<0.000465	<0.000442	BRL	-	-	-	-

Summary of Groundwater Analytical Data
Moore to Jal #2
SRS #2002-10273

Sample Designation	Date Sampled	Concentration (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Xylenes, Total	BTEX	MTBE	Notes
MW-21	06/12/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-	-
	09/26/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954	-
	12/14/12	<0.000310	<0.000259	<0.000291	BRL	-	-	-	-
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
	06/20/13	<0.000500	<0.00100	<0.000700	-	<0.000700	U	-	-
	09/27/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-	-
	12/31/13	0.00100	<0.000465	<0.000442	BRL	-	-	-	-
MW-22	01/10/14	<0.00100	0.00180	0.00180	0.00640	-	-	-	-
MW-23	01/10/14	0.00100	0.00670	0.00390	0.0178	-	-	-	-

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes, analyzed by EPA Method 8021

C6-C12, >C12-C28, >C28-C35, and C6-C35 analyzed by Method TX1005

A = Not sampled due to PSH

I = Not sampled - well dry

Summary of Historical Soil Analytical Data
Moore to Jal #2
SRS #2002-10273

Sample Designation	Date Sampled	Top	Bottom	Concentration (mg/kg)									
				Benzene	Toluene	Ethylbenzene	Total Xylenes	Xylenes, Total	BTEX	C6-C12	>C12-C28	>C28-C35	Total TPH
Stockpile Comp.	03/04/10			BRL	BRL	BRL	BRL	-	-	-	-	-	-
MW-17(60-70)	08/11/10			BRL	BRL	BRL	BRL	-	-	-	-	-	-
Stockpile Comp.	08/19/10			BRL	BRL	BRL	BRL	-	-	-	-	-	-
MW-3A	12/17/13		90	<0.000498	<0.000996	<0.000498	-	0.0938	0.0938	297	1470	47.7	1810
	12/17/13		110	<0.000498	<0.000996	<0.000498	-	0.00424	0.00424	30.7	149	<10.9	180
MW-4A	12/17/13		90	<0.000499	<0.000998	<0.000499	-	0.00299	0.00299	18.8	132	<10.4	151
	12/17/13		110	<0.000498	<0.000996	<0.000498	-	<0.000498	U	<11.7	21.1	<11.7	21.1
MW-22	12/17/13		90	<0.000498	<0.000996	<0.000498	-	<0.000498	U	<10.3	16.3	<10.3	16.3
	12/17/13		110	<0.000499	<0.000998	<0.000499	-	<0.000499	U	<10.0	<10.0	<10.0	<10.0
MW-23	12/17/13		90	<0.000496	<0.000992	<0.000496	-	<0.000496	U	<10.2	<10.2	<10.2	<10.2
	12/17/13		110	<0.000500	<0.00100	<0.000500	-	<0.000500	U	<9.96	18.4	<9.96	18.4

APPENDIX C

Laboratory Analytical Data Reports and Chains of Custody Documentation

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Brad Ivy
Talon LPE-Midland
2901 State Highway 349
Midland, TX, 79706

Report Date: March 26, 2013

Work Order: 13032201

Project Location: Hobbs, NM
Project Name: Jal #2
Project Number: 700376.045.01
SRS #: 2002-10273

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
324267	MW-8	water	2013-03-21	10:50	2013-03-21
324268	MW-10	water	2013-03-21	11:15	2013-03-21
324269	MW-11	water	2013-03-21	10:40	2013-03-21
324270	MW-12	water	2013-03-21	10:50	2013-03-21
324271	MW-13	water	2013-03-21	11:05	2013-03-21
324272	MW-14	water	2013-03-21	10:25	2013-03-21
324273	MW-15	water	2013-03-21	10:30	2013-03-21
324274	MW-16	water	2013-03-21	11:55	2013-03-21
324275	MW-17	water	2013-03-21	11:25	2013-03-21
324276	MW-18	water	2013-03-21	11:35	2013-03-21
324277	MW-19	water	2013-03-21	11:40	2013-03-21
324278	MW-20	water	2013-03-21	10:10	2013-03-21
324279	MW-21	water	2013-03-21	10:15	2013-03-21

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Jal #2 were received by TraceAnalysis, Inc. on 2013-03-21 and assigned to work order 13032201. Samples for work order 13032201 were received intact without headspace and at a temperature of 2.6 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	84684	2013-03-22 at 10:05	99969	2013-03-22 at 10:05
BTEX	S 8021B	84710	2013-03-25 at 13:47	99998	2013-03-25 at 13:47

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13032201 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 324267 - MW-8

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99969	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84684	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.584**	mg/L	50	0.00100
Toluene	U	1	<0.0500	mg/L	50	0.00100
Ethylbenzene	U	1	<0.0500	mg/L	50	0.00100
Xylene	U	1	<0.0500	mg/L	50	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			4.21	mg/L	50	5.00	84	69.8 - 120
4-Bromofluorobenzene (4-BFB)			3.77	mg/L	50	5.00	75	67.3 - 120

Sample: 324268 - MW-10

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99969	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84684	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0867	mg/L	1	0.100	87	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0815	mg/L	1	0.100	82	67.3 - 120

Sample: 324269 - MW-11

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99969	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84684	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0811	mg/L	1	0.100	81	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0809	mg/L	1	0.100	81	67.3 - 120

Sample: 324270 - MW-12

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99969	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84684	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	<0.00100	mg/L	1	0.00100
Toluene		1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0790	mg/L	1	0.100	79	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0774	mg/L	1	0.100	77	67.3 - 120

Sample: 324271 - MW-13

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99969	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84684	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**18.2**	mg/L	50	0.00100
Toluene	U	1	<0.0500	mg/L	50	0.00100
Ethylbenzene	U	1	<0.0500	mg/L	50	0.00100
Xylene	U	1	<0.0500	mg/L	50	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			4.49	mg/L	50	5.00	90	69.8 - 120
4-Bromofluorobenzene (4-BFB)			4.04	mg/L	50	5.00	81	67.3 - 120

Sample: 324272 - MW-14

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99969	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84684	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0849	mg/L	1	0.100	85	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0786	mg/L	1	0.100	79	67.3 - 120

Sample: 324273 - MW-15

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99969	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84684	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Benzene		1	**15.2**		mg/L	50	0.00100
Toluene	U	1	<0.0500		mg/L	50	0.00100
Ethylbenzene		1	**0.0921**		mg/L	50	0.00100
Xylene		1	**0.0904**		mg/L	50	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			4.53	mg/L	50	5.00	91	69.8 - 120
4-Bromofluorobenzene (4-BFB)			3.90	mg/L	50	5.00	78	67.3 - 120

Sample: 324274 - MW-16

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99969	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84684	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Benzene		1	<0.00100		mg/L	1	0.00100
Toluene	U	1	<0.00100		mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100		mg/L	1	0.00100
Xylene	U	1	<0.00100		mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0839	mg/L	1	0.100	84	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0802	mg/L	1	0.100	80	67.3 - 120

Sample: 324275 - MW-17

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99969	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84684	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene		1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0840	mg/L	1	0.100	84	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0795	mg/L	1	0.100	80	67.3 - 120

Sample: 324276 - MW-18

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99969	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84684	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.282**	mg/L	1	0.00100
Toluene		1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	**0.00260**	mg/L	1	0.00100
Xylene		1	**0.00310**	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0914	mg/L	1	0.100	91	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0809	mg/L	1	0.100	81	67.3 - 120

Sample: 324277 - MW-19

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99998	Date Analyzed:	2013-03-25	Analyzed By:	MT
Prep Batch:	84710	Sample Preparation:	2013-03-25	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.0320**	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene		1	**0.00620**	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0890	mg/L	1	0.100	89	80 - 120
4-Bromofluorobenzene (4-BFB)			0.0886	mg/L	1	0.100	89	80 - 120

Sample: 324278 - MW-20

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99969	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84684	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0797	mg/L	1	0.100	80	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0781	mg/L	1	0.100	78	67.3 - 120

Sample: 324279 - MW-21

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99969	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84684	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0869	mg/L	1	0.100	87	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0813	mg/L	1	0.100	81	67.3 - 120

Method Blanks

Method Blank (1) QC Batch: 99969

QC Batch: 99969 | Date Analyzed: 2013-03-22 | Analyzed By: MT
Prep Batch: 84684 | QC Preparation: 2013-03-22 | Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000387	mg/L	0.001
Toluene		1	<0.000465	mg/L	0.001
Ethylbenzene		1	<0.000442	mg/L	0.001
Xylene		1	<0.000413	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0853	mg/L	1	0.100	85	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0780	mg/L	1	0.100	78	67.3 - 120

Method Blank (1) QC Batch: 99998

QC Batch: 99998 | Date Analyzed: 2013-03-25 | Analyzed By: MT
Prep Batch: 84710 | QC Preparation: 2013-03-25 | Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000567	mg/L	0.001
Toluene		1	<0.000518	mg/L	0.001
Ethylbenzene		1	<0.000518	mg/L	0.001
Xylene		1	<0.000548	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0908	mg/L	1	0.100	91	80 - 120
4-Bromofluorobenzene (4-BFB)			0.0901	mg/L	1	0.100	90	80 - 120

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 99969 | Date Analyzed: 2013-03-22 | Analyzed By: MT
Prep Batch: 84684 | QC Preparation: 2013-03-22 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0854	mg/L	1	0.100	<0.000387	85	74.4 - 120
Toluene		1	0.0849	mg/L	1	0.100	<0.000465	85	75 - 120
Ethylbenzene		1	0.0849	mg/L	1	0.100	<0.000442	85	74.7 - 120
Xylene		1	0.257	mg/L	1	0.300	<0.000413	86	75.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0867	mg/L	1	0.100	<0.000387	87	74.4 - 120	2	20
Toluene		1	0.0854	mg/L	1	0.100	<0.000465	85	75 - 120	1	20
Ethylbenzene		1	0.0864	mg/L	1	0.100	<0.000442	86	74.7 - 120	2	20
Xylene		1	0.261	mg/L	1	0.300	<0.000413	87	75.9 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0849	0.0849	mg/L	1	0.100	85	85	69.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0801	0.0799	mg/L	1	0.100	80	80	67.3 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 99998 | Date Analyzed: 2013-03-25 | Analyzed By: MT
Prep Batch: 84710 | QC Preparation: 2013-03-25 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0911	mg/L	1	0.100	<0.000567	91	80 - 120
Toluene		1	0.0964	mg/L	1	0.100	<0.000518	96	80 - 120
Ethylbenzene		1	0.0961	mg/L	1	0.100	<0.000518	96	80 - 120
Xylene		1	0.283	mg/L	1	0.300	<0.000548	94	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0878	mg/L	1	0.100	<0.000567	88	80 - 120	4	20
Toluene		1	0.0934	mg/L	1	0.100	<0.000518	93	80 - 120	3	20
Ethylbenzene		1	0.0923	mg/L	1	0.100	<0.000518	92	80 - 120	4	20
Xylene		1	0.274	mg/L	1	0.300	<0.000548	91	80 - 120	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0930	0.0895	mg/L	1	0.100	93	90	80 - 120
4-Bromofluorobenzene (4-BFB)	0.0901	0.0868	mg/L	1	0.100	90	87	80 - 120

Matrix Spike (MS-1) Spiked Sample: 324268

QC Batch: 99969 | Date Analyzed: 2013-03-22 | Analyzed By: MT
Prep Batch: 84684 | QC Preparation: 2013-03-22 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0865	mg/L	1	0.100	<0.000387	86	57.7 - 120
Toluene		1	0.0855	mg/L	1	0.100	<0.000465	86	56.9 - 120
Ethylbenzene		1	0.0859	mg/L	1	0.100	<0.000442	86	62.9 - 120
Xylene		1	0.258	mg/L	1	0.300	<0.000413	86	63.2 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0856	mg/L	1	0.100	<0.000387	86	57.7 - 120	1	20
Toluene		1	0.0847	mg/L	1	0.100	<0.000465	85	56.9 - 120	1	20
Ethylbenzene		1	0.0850	mg/L	1	0.100	<0.000442	85	62.9 - 120	1	20
Xylene		1	0.256	mg/L	1	0.300	<0.000413	85	63.2 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0867	0.0818	mg/L	1	0.1	87	82	69.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0833	0.0840	mg/L	1	0.1	83	84	67.3 - 120

Matrix Spike (MS-1) Spiked Sample: 324288

QC Batch: 99998 | Date Analyzed: 2013-03-25 | Analyzed By: MT
Prep Batch: 84710 | QC Preparation: 2013-03-25 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		[1]	2.07	mg/L	10	1.00	1.2	87	64.6 - 120
Toluene		[1]	1.58	mg/L	10	1.00	0.617	96	62.9 - 123
Ethylbenzene		[1]	0.974	mg/L	10	1.00	0.0535	92	64.2 - 123
Xylene		[1]	3.02	mg/L	10	3.00	0.29	91	63.1 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		[1]	1.98	mg/L	10	1.00	1.2	78	64.6 - 120	4	20
Toluene		[1]	1.51	mg/L	10	1.00	0.617	89	62.9 - 123	4	20
Ethylbenzene		[1]	0.934	mg/L	10	1.00	0.0535	88	64.2 - 123	4	20
Xylene		[1]	2.88	mg/L	10	3.00	0.29	86	63.1 - 121	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.973	0.946	mg/L	10	1	97	95	80 - 120
4-Bromofluorobenzene (4-BFB)	0.895	0.869	mg/L	10	1	90	87	80 - 120

Calibration Standards

Standard (CCV-1)

QC Batch: 99969 | Date Analyzed: 2013-03-22 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0858	86	80 - 120	2013-03-22
Toluene		1	mg/L	0.100	0.0853	85	80 - 120	2013-03-22
Ethylbenzene		1	mg/L	0.100	0.0862	86	80 - 120	2013-03-22
Xylene		1	mg/L	0.300	0.260	87	80 - 120	2013-03-22

Standard (CCV-2)

QC Batch: 99969 | Date Analyzed: 2013-03-22 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0857	86	80 - 120	2013-03-22
Toluene		1	mg/L	0.100	0.0848	85	80 - 120	2013-03-22
Ethylbenzene		1	mg/L	0.100	0.0846	85	80 - 120	2013-03-22
Xylene		1	mg/L	0.300	0.254	85	80 - 120	2013-03-22

Standard (CCV-3)

QC Batch: 99969 | Date Analyzed: 2013-03-22 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0855	86	80 - 120	2013-03-22
Toluene		1	mg/L	0.100	0.0834	83	80 - 120	2013-03-22
Ethylbenzene		1	mg/L	0.100	0.0834	83	80 - 120	2013-03-22
Xylene		1	mg/L	0.300	0.250	83	80 - 120	2013-03-22

Standard (CCV-1)

QC Batch: 99998 | Date Analyzed: 2013-03-25 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0943	94	80 - 120	2013-03-25
Toluene		1	mg/L	0.100	0.0991	99	80 - 120	2013-03-25
Ethylbenzene		1	mg/L	0.100	0.0982	98	80 - 120	2013-03-25
Xylene		1	mg/L	0.300	0.290	97	80 - 120	2013-03-25

Standard (CCV-2)

QC Batch: 99998 | Date Analyzed: 2013-03-25 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0865	86	80 - 120	2013-03-25
Toluene		1	mg/L	0.100	0.0921	92	80 - 120	2013-03-25
Ethylbenzene		1	mg/L	0.100	0.0940	94	80 - 120	2013-03-25
Xylene		1	mg/L	0.300	0.270	90	80 - 120	2013-03-25

Standard (CCV-3)

QC Batch: 99998 | Date Analyzed: 2013-03-25 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0894	89	80 - 120	2013-03-25
Toluene		1	mg/L	0.100	0.0957	96	80 - 120	2013-03-25
Ethylbenzene		1	mg/L	0.100	0.0952	95	80 - 120	2013-03-25
Xylene		1	mg/L	0.300	0.281	94	80 - 120	2013-03-25

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-12-8	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

LAB Order ID # 1303220 1

Page 1 of 2

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Company Name: Tolco LPE — Phone #: 432-522-2133

Address: (Street, City, Zip) 2901 SPWY 349, Midland, TX — Fax #: 432-522-2183

Contact Person: Brad Ivy — E-mail: Bivy@tolcolpe.com

Invoice to: (If different from above) Plains SRS# 2002-10273

Project #: 700376.045.01 — Project Name: JAL #2

Project Location (including state): Hobbs, NM — Sampler Signature: Ronnie C

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC					Turn Around Time if different from standard	Hold
324267	MW-8	3	VOA	X				X				X		3/21/13	1050		X																								
268	MW-10	3	VOA	X				X				X			1115		X																								
269	MW-11	3	VOA	X				X				X			1040		X																								
270	MW-12	3	VOA	X				X				X			1050		X																								
271	MW-13	3	VOA	X				X				X			1105		X																								
272	MW-14	3	VOA	X				X				X			1025		X																								
273	MW-15	3	VOA	X				X				X			1030		X																								
274	MW-16	3	VOA	X				X				X			1155		X																								
275	MW-17	3	VOA	X				X				X			1125		X																								
276	MW-18	3	VOA	X				X				X			1135		X																								
277	MW-19	3	VOA	X				X				X			1140		X																								

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
Ronnie C	Tolco	3/21/13	1630					INST ____ OBS ____ °C COR ____ °C
								INST ____ OBS ____ °C COR ____ °C
				Brandi Ward	Trac Lubbock	3/21/13	16:30	INST A 2 OBS 3.2 °C COR 2.6 °C

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-In-Review

REMARKS:

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # Campbell

ORIGINAL COPY

LAB Order ID # 13032201

Page 2 of 2

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
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200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
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1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Company Name: Tolow LPC
Phone #: 432-522-2133

Address: (Street, City, Zip) 2901 S Hwy 349, Midland, TX
Fax #: 432-522-2183

Contact Person: Brad Ivy
E-mail: Bivy@tolowLPC.com

Invoice to: (If different from above) Plains SRS# 2002-10273

Project #: 700376045.01
Project Name: JDL #2

Project Location (including state):
Sampler Signature:

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE		PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE		SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC					Turn Around Time if different from standard	Hold
324278	MW-20	3	VOA	X					X				X			3/21/13	1010		X																						
279	MW-21	3	VOA	X					X				X			3/21/13	1015		X																						

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
Brad Ivy	Tolow	3/21/13	1630					INST ____ OBS ____ °C COR ____ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST ____ OBS ____ °C COR ____ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST P.2 OBS 3.2 °C COR 2.6 °C
				Brenda Ward	Trace Lubbock	3/21/13	16:30	

LAB USE ONLY

Intact Y / N
Headspace Y / N / NA
Log-in-Review

REMARKS:

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # Campbell

ORIGINAL COPY

Analytical Report 465527

for

PLAINS ALL AMERICAN EH&S

Project Manager: Brad Ivy

Moore to Jal #2

700376.045.01

27-JUN-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

27-JUN-13

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

Reference: XENCO Report No(s): **465527**
Moore to Jal #2
Project Address: Lea County, NM

Brad Ivy:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 465527. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 465527 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 465527

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #2

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-8	W	06-20-13 14:30		465527-001
MW-10	W	06-20-13 12:30		465527-002
MW-11	W	06-20-13 12:00		465527-003
MW-12	W	06-20-13 14:45		465527-004
MW-13	W	06-20-13 15:00		465527-005
MW-14	W	06-20-13 10:30		465527-006
MW-15	W	06-20-13 15:30		465527-007
MW-16	W	06-20-13 10:00		465527-008
MW-17	W	06-20-13 13:00		465527-009
MW-18	W	06-20-13 13:30		465527-010
MW-19	W	06-20-13 14:00		465527-011
MW-20	W	06-20-13 11:00		465527-012
MW-21	W	06-20-13 11:30		465527-013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results 465527

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #2

Sample Id: **MW-8** Matrix: Water Date Received:06.20.13 17.05

Lab Sample Id: 465527-001 Date Collected: 06.20.13 14.30

Analytical Method: BTEX by EPA 8021 Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.26.13 08.00

Seq Number: 917132

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.0360**	0.00100	mg/L	06.26.13 09.59		1
Toluene	108-88-3	ND	0.00200	mg/L	06.26.13 09.59	U	1
Ethylbenzene	100-41-4	**0.0120**	0.00100	mg/L	06.26.13 09.59		1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.26.13 09.59	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.26.13 09.59	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.26.13 09.59	U	1
Total BTEX		**0.0480**	0.00100	mg/L	06.26.13 09.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	80-120	06.26.13 09.59	
4-Bromofluorobenzene	460-00-4	84	%	80-120	06.26.13 09.59	

Certificate of Analytical Results 465527

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #2

Sample Id: **MW-10** Matrix: Water Date Received:06.20.13 17.05

Lab Sample Id: 465527-002 Date Collected: 06.20.13 12.30

Analytical Method: BTEX by EPA 8021 Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.26.13 08.00

Seq Number: 917132

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.26.13 10.15	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.26.13 10.15	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.26.13 10.15	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.26.13 10.15	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.26.13 10.15	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.26.13 10.15	U	1
Total BTEX		ND	0.00100	mg/L	06.26.13 10.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	80-120	06.26.13 10.15	
4-Bromofluorobenzene	460-00-4	89	%	80-120	06.26.13 10.15	

Certificate of Analytical Results 465527

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #2

Sample Id: **MW-11**
Lab Sample Id: 465527-003

Matrix: Water
Date Collected: 06.20.13 12.00

Date Received:06.20.13 17.05

Analytical Method: BTEX by EPA 8021
Tech: DYV
Analyst: DYV
Seq Number: 917132

Prep Method: SW5030B
% Moisture:

Date Prep: 06.26.13 08.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.26.13 10.31	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.26.13 10.31	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.26.13 10.31	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.26.13 10.31	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.26.13 10.31	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.26.13 10.31	U	1
Total BTEX		ND	0.00100	mg/L	06.26.13 10.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	80-120	06.26.13 10.31	
4-Bromofluorobenzene	460-00-4	85	%	80-120	06.26.13 10.31	

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PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #2

Sample Id: **MW-12**
Lab Sample Id: 465527-004

Matrix: Water
Date Collected: 06.20.13 14.45

Date Received:06.20.13 17.05

Analytical Method: BTEX by EPA 8021
Tech: DYV
Analyst: DYV
Seq Number: 917132

Prep Method: SW5030B
% Moisture:

Date Prep: 06.26.13 08.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.0106**	0.00100	mg/L	06.26.13 10.48		1
Toluene	108-88-3	**0.00727**	0.00200	mg/L	06.26.13 10.48		1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.26.13 10.48	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.26.13 10.48	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.26.13 10.48	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.26.13 10.48	U	1
Total BTEX		**0.0179**	0.00100	mg/L	06.26.13 10.48		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	80-120	06.26.13 10.48	
4-Bromofluorobenzene	460-00-4	83	%	80-120	06.26.13 10.48	

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PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #2

Sample Id: **MW-13** Matrix: Water Date Received:06.20.13 17.05

Lab Sample Id: 465527-005 Date Collected: 06.20.13 15.00

Analytical Method: BTEX by EPA 8021 Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.26.13 08.00

Seq Number: 917132

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**17.6**	0.0500	mg/L	06.26.13 16.46		50
Toluene	108-88-3	ND	0.100	mg/L	06.26.13 16.46	U	50
Ethylbenzene	100-41-4	**0.118**	0.0500	mg/L	06.26.13 16.46		50
m_p-Xylenes	179601-23-1	ND	0.100	mg/L	06.26.13 16.46	U	50
o-Xylene	95-47-6	ND	0.0500	mg/L	06.26.13 16.46	U	50
Xylenes, Total	1330-20-7	ND	0.0500	mg/L	06.26.13 16.46	U	50
Total BTEX		**17.7**	0.0500	mg/L	06.26.13 16.46		50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	80-120	06.26.13 16.46	
4-Bromofluorobenzene	460-00-4	106	%	80-120	06.26.13 16.46	

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PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #2

Sample Id:	**MW-14**	Matrix:	Water	Date Received:	06.20.13 17.05
Lab Sample Id:	465527-006	Date Collected:	06.20.13 10.30		
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	DYV			% Moisture:	
Analyst:	DYV	Date Prep:	06.26.13 08.00		
Seq Number:	917132				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.26.13 11.04	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.26.13 11.04	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.26.13 11.04	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.26.13 11.04	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.26.13 11.04	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.26.13 11.04	U	1
Total BTEX		ND	0.00100	mg/L	06.26.13 11.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	80-120	06.26.13 11.04	
4-Bromofluorobenzene	460-00-4	83	%	80-120	06.26.13 11.04	

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PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #2

Sample Id: **MW-15** Matrix: Water Date Received:06.20.13 17.05

Lab Sample Id: 465527-007 Date Collected: 06.20.13 15.30

Analytical Method: BTEX by EPA 8021 Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.26.13 08.00

Seq Number: 917132

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**30.2**	0.100	mg/L	06.26.13 16.29		100
Toluene	108-88-3	ND	0.200	mg/L	06.26.13 16.29	U	100
Ethylbenzene	100-41-4	**0.427**	0.100	mg/L	06.26.13 16.29		100
m_p-Xylenes	179601-23-1	ND	0.200	mg/L	06.26.13 16.29	U	100
o-Xylene	95-47-6	ND	0.100	mg/L	06.26.13 16.29	U	100
Xylenes, Total	1330-20-7	ND	0.100	mg/L	06.26.13 16.29	U	100
Total BTEX		**30.6**	0.100	mg/L	06.26.13 16.29		100

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	115	%	80-120	06.26.13 16.29	
4-Bromofluorobenzene	460-00-4	87	%	80-120	06.26.13 16.29	

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PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #2

Sample Id:	**MW-16**	Matrix:	Water	Date Received:	06.20.13 17.05
Lab Sample Id:	465527-008	Date Collected:	06.20.13 10.00		
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	DYV			% Moisture:	
Analyst:	DYV	Date Prep:	06.26.13 08.00		
Seq Number:	917132				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.0679**	0.00100	mg/L	06.26.13 11.20		1
Toluene	108-88-3	ND	0.00200	mg/L	06.26.13 11.20	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.26.13 11.20	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.26.13 11.20	U	1
o-Xylene	95-47-6	**0.00185**	0.00100	mg/L	06.26.13 11.20		1
Xylenes, Total	1330-20-7	**0.00185**	0.00100	mg/L	06.26.13 11.20		1
Total BTEX		**0.0698**	0.00100	mg/L	06.26.13 11.20		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	112	%	80-120	06.26.13 11.20	
4-Bromofluorobenzene	460-00-4	88	%	80-120	06.26.13 11.20	

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PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #2

Sample Id:	**MW-17**	Matrix:	Water	Date Received:	06.20.13 17.05
Lab Sample Id:	465527-009	Date Collected:	06.20.13 13.00		
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	DYV			% Moisture:	
Analyst:	DYV	Date Prep:	06.26.13 08.00		
Seq Number:	917132				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.26.13 11.36	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.26.13 11.36	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.26.13 11.36	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.26.13 11.36	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.26.13 11.36	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.26.13 11.36	U	1
Total BTEX		ND	0.00100	mg/L	06.26.13 11.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	80-120	06.26.13 11.36	
4-Bromofluorobenzene	460-00-4	84	%	80-120	06.26.13 11.36	

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PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #2

Sample Id:	**MW-18**	Matrix:	Water	Date Received:	06.20.13 17.05
Lab Sample Id:	465527-010	Date Collected:	06.20.13 13.30		
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	DYV			% Moisture:	
Analyst:	DYV	Date Prep:	06.26.13 08.00		
Seq Number:	917132				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.0972**	0.00100	mg/L	06.26.13 16.13		1
Toluene	108-88-3	ND	0.00200	mg/L	06.26.13 16.13	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.26.13 16.13	U	1
m_p-Xylenes	179601-23-1	**0.00296**	0.00200	mg/L	06.26.13 16.13		1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.26.13 16.13	U	1
Xylenes, Total	1330-20-7	**0.00296**	0.00100	mg/L	06.26.13 16.13		1
Total BTEX		**0.100**	0.00100	mg/L	06.26.13 16.13		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	115	%	80-120	06.26.13 16.13	
4-Bromofluorobenzene	460-00-4	85	%	80-120	06.26.13 16.13	

Certificate of Analytical Results 465527

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #2

Sample Id:	**MW-19**	Matrix:	Water	Date Received:	06.20.13 17.05
Lab Sample Id:	465527-011	Date Collected:	06.20.13 14.00		
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	DYV			% Moisture:	
Analyst:	DYV	Date Prep:	06.26.13 08.00		
Seq Number:	917132				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00343**	0.00100	mg/L	06.26.13 11.51		1
Toluene	108-88-3	ND	0.00200	mg/L	06.26.13 11.51	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.26.13 11.51	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.26.13 11.51	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.26.13 11.51	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.26.13 11.51	U	1
Total BTEX		**0.00343**	0.00100	mg/L	06.26.13 11.51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	80-120	06.26.13 11.51	
4-Bromofluorobenzene	460-00-4	81	%	80-120	06.26.13 11.51	

Certificate of Analytical Results 465527

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #2

Sample Id: **MW-20**
Lab Sample Id: 465527-012

Matrix: Water
Date Collected: 06.20.13 11.00

Date Received:06.20.13 17.05

Analytical Method: BTEX by EPA 8021
Tech: DYV
Analyst: DYV
Seq Number: 917132

Prep Method: SW5030B
% Moisture:

Date Prep: 06.26.13 08.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.26.13 12.08	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.26.13 12.08	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.26.13 12.08	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.26.13 12.08	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.26.13 12.08	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.26.13 12.08	U	1
Total BTEX		ND	0.00100	mg/L	06.26.13 12.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	80-120	06.26.13 12.08	
4-Bromofluorobenzene	460-00-4	82	%	80-120	06.26.13 12.08	

Certificate of Analytical Results 465527

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #2

Sample Id: **MW-21**
Lab Sample Id: 465527-013

Matrix: Water
Date Collected: 06.20.13 11.30

Date Received:06.20.13 17.05

Analytical Method: BTEX by EPA 8021
Tech: DYV
Analyst: DYV
Seq Number: 917132

Prep Method: SW5030B
% Moisture:

Date Prep: 06.26.13 08.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.26.13 12.24	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.26.13 12.24	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.26.13 12.24	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.26.13 12.24	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.26.13 12.24	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.26.13 12.24	U	1
Total BTEX		ND	0.00100	mg/L	06.26.13 12.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	80-120	06.26.13 12.24	
4-Bromofluorobenzene	460-00-4	81	%	80-120	06.26.13 12.24	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

\+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

QC Summary 465527

PLAINS ALL AMERICAN EH&S

Moore to Jal #2

Analytical Method: **BTEX by EPA 8021** Prep Method: SW5030B

Seq Number: 917132 Matrix: Water Date Prep: 06.26.13

MB Sample Id: 640227-1-BLK LCS Sample Id: 640227-1-BKS LCSD Sample Id: 640227-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.118	118	0.116	116	70-125	2	25	mg/L	06.26.13 08:55	
Toluene	<0.00200	0.100	0.100	100	0.0966	97	70-125	3	25	mg/L	06.26.13 08:55	
Ethylbenzene	<0.00100	0.100	0.0929	93	0.0892	89	71-129	4	25	mg/L	06.26.13 08:55	
m_p-Xylenes	<0.00200	0.200	0.186	93	0.179	90	70-131	4	25	mg/L	06.26.13 08:55	
o-Xylene	<0.00100	0.100	0.0941	94	0.0904	90	71-133	4	25	mg/L	06.26.13 08:55	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		100		97		80-120	%	06.26.13 08:55
4-Bromofluorobenzene	86		88		84		80-120	%	06.26.13 08:55

Analytical Method: **BTEX by EPA 8021** Prep Method: SW5030B

Seq Number: 917132 Matrix: Water Date Prep: 06.26.13

Parent Sample Id: 465527-001 MS Sample Id: 465527-001 S MSD Sample Id: 465527-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.0360	0.100	0.150	114	0.157	121	70-125	5	25	mg/L	06.26.13 12:40	
Toluene	<0.00200	0.100	0.0944	94	0.0993	99	70-125	5	25	mg/L	06.26.13 12:40	
Ethylbenzene	0.0120	0.100	0.0973	85	0.102	90	71-129	5	25	mg/L	06.26.13 12:40	
m_p-Xylenes	<0.00200	0.200	0.174	87	0.182	91	70-131	4	25	mg/L	06.26.13 12:40	
o-Xylene	<0.00100	0.100	0.0878	88	0.0919	92	71-133	5	25	mg/L	06.26.13 12:40	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		114		80-120	%	06.26.13 12:40
4-Bromofluorobenzene	89		89		80-120	%	06.26.13 12:40

Xenco Laboratories

ie Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Brad Ivy
Company Name: Talon/LPE
Company Address: 521 N. Bivins St.
City/State/Zip: Amarillo, TX 79107
Telephone No: (432) 978-5414 Fax No: (806) 467-0622
Sampler Signature: Mark Ramos
e-mail: Bivy@talonlpe.com

Project Name: Moore fo Jal #2
Project #: 700376.045.01
Project Loc: Lea Co., NM
PO #: Plains 2002-10273
Report Format: ☑ Standard ☐ TRRP ☐ NPDES

(lab use only) ORDER #: 465527

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 8015M 8015B	TOTAL: TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	MW-8			6-20-13	14:30		3	X		X						GW									X				X
	MW-10			6-20-13	12:30		3	X		X						GW									X				X
	MW-11			6-20-13	12:00		3	X		X						GW									X				X
	MW-12			6-20-13	14:45		3	X		X						GW									X				X
	MW-13			6-20-13	15:00		3	X		X						GW									X				X
	MW-14			6-20-13	10:30		3	X		X						GW									X				X
	MW-15			6-20-13	15:30		3	X		X						GW									X				X
	MW-16			6-20-13	10:00		3	X		X						GW									X				X
	MW-17			6-20-13	13:00		3	X		X						GW									X				X
	MW-18			6-20-13	13:30		3	X		X						GW									X				X

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
Mark Ramos	6-20-13	17:05	[illegible]	6/20/13	555
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: Shawne Smith	Date 6-24-13	Time 9:55

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N
by Courier? UPS DHL FedEx Lone Star		

Temperature Upon Receipt: As Read 4.1 °C Corrected 3.0

Xenco Laboratories
The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Brad Ivy
Company Name: Talon/LPE
Company Address: 921 N. Bivins St
City/State/Zip: Amarillo, Tx 79107
Telephone No: (432) 978-5410
Fax No: (806) 467-0622
Sampler Signature: [signature]
e-mail: Bivy@talonlpe.com

Project Name: Moore to Jal #2
Project #: 700376.045.01
Project Loc: Lea Co., NM
PO #: Plains 2002-10223
Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 465527

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix (DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other)	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	MW-19			6-20-13	14:00		3	X		X						GW									X				X
	MW-20			6-20-13	11:00		3	X		X						GW									X				X
	MW-21			6-20-13	11:30		3	X		X						GW									X				X

Analyze For: TCLP: TOTAL:

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	6-20-13	17:05	[signature]	6-20-13	5:05
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			[signature]	6-24-13	9:55

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep.?	Y	N
by Courier? UPS DHL FedEx Lone Star		

Temperature Upon Receipt: As Read 4.1 °C Corrected 2.0

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 06/20/2013 05:05:00 PM

Work Order #: 465527

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 06/24/2013

Checklist reviewed by: Kelsey Brooks Date: 06/24/2013

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Brad Ivy
Talon LPE-Amarillo
921 North Bivins
Amarillo, TX, 79107

Report Date: October 7, 2013

Work Order: 13100204

Project Location: Lea Co. New Mexico
Project Name: Moore to Jal #2
Project Number: 700376.045.01
SRS #: 2002-10-2737

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
343048	MW-10	water	2013-09-27	14:20	2013-10-01
343049	MW-11	water	2013-09-27	14:00	2013-10-01
343050	MW-12	water	2013-09-27	13:40	2013-10-01
343051	MW-13	water	2013-09-27	15:20	2013-10-01
343052	MW-14	water	2013-09-27	13:20	2013-10-01
343053	MW-15	water	2013-09-27	15:40	2013-10-01
343054	MW-16	water	2013-09-27	13:00	2013-10-01
343055	MW-17	water	2013-09-27	12:40	2013-10-01
343056	MW-18	water	2013-09-27	15:00	2013-10-01
343057	MW-19	water	2013-09-27	14:40	2013-10-01
343058	MW-20	water	2013-09-27	12:00	2013-10-01
343059	MW-21	water	2013-09-27	12:20	2013-10-01

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

TraceAnalysis, Inc.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Moore to Jal #2 were received by TraceAnalysis, Inc. on 2013-10-01 and assigned to work order 13100204. Samples for work order 13100204 were received intact without headspace and at a temperature of 2.5 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	89499	2013-10-02 at 13:57	105675	2013-10-02 at 13:57
BTEX	S 8021B	89534	2013-10-03 at 15:28	105713	2013-10-03 at 15:28
BTEX	S 8021B	89560	2013-10-04 at 12:35	105741	2013-10-04 at 12:35

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13100204 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 343048 - MW-10

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105713	Date Analyzed:	2013-10-03	Analyzed By:	JS
Prep Batch:	89534	Sample Preparation:	2013-10-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.104	mg/L	1	0.100	104	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.104	mg/L	1	0.100	104	74.6 - 120

Sample: 343049 - MW-11

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105713	Date Analyzed:	2013-10-03	Analyzed By:	JS
Prep Batch:	89534	Sample Preparation:	2013-10-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.104	mg/L	1	0.100	104	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.103	mg/L	1	0.100	103	74.6 - 120

Sample: 343050 - MW-12

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105675	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89499	Sample Preparation:	2013-10-02	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr,U	1	<0.00100	mg/L	1	0.00100
Toluene	Qr,U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Qr,Qs,U	1	<0.00100	mg/L	1	0.00100
Xylene	Qr,Qs,U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0893	mg/L	1	0.100	89	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0833	mg/L	1	0.100	83	67.5 - 120

Sample: 343051 - MW-13

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105675	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89499	Sample Preparation:	2013-10-02	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr	1	**16.7**	mg/L	50	0.00100
Toluene	Qr,U	1	<0.0500	mg/L	50	0.00100
Ethylbenzene	Qr,Qs,U	1	<0.0500	mg/L	50	0.00100
Xylene	Qr,Qs,U	1	<0.0500	mg/L	50	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			4.28	mg/L	50	5.00	86	68.8 - 120
4-Bromofluorobenzene (4-BFB)			4.24	mg/L	50	5.00	85	67.5 - 120

Sample: 343052 - MW-14

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105675	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89499	Sample Preparation:	2013-10-02	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	Qr,U	1	<0.00100	mg/L	1	0.00100
Toluene	Qr,U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Qr,Qs,U	1	<0.00100	mg/L	1	0.00100
Xylene	Qr,Qs,U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0983	mg/L	1	0.100	98	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0844	mg/L	1	0.100	84	67.5 - 120

Sample: 343053 - MW-15

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105741	Date Analyzed:	2013-10-04	Analyzed By:	MT
Prep Batch:	89560	Sample Preparation:	2013-10-04	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**24.2**	mg/L	200	0.00100
Toluene	U	1	<0.200	mg/L	200	0.00100
Ethylbenzene	U	1	<0.200	mg/L	200	0.00100
Xylene	U	1	<0.200	mg/L	200	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			17.3	mg/L	200	20.0	86	68.8 - 120
4-Bromofluorobenzene (4-BFB)			17.1	mg/L	200	20.0	86	67.5 - 120

Sample: 343054 - MW-16

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105675	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89499	Sample Preparation:	2013-10-02	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	Qr,U	1	<0.00100	mg/L	1	0.00100
Toluene	Qr,U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Qr,Qs,U	1	<0.00100	mg/L	1	0.00100
Xylene	Qr,Qs,U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0963	mg/L	1	0.100	96	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0844	mg/L	1	0.100	84	67.5 - 120

Sample: 343055 - MW-17

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105675	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89499	Sample Preparation:	2013-10-02	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	Qr,U	1	<0.00100	mg/L	1	0.00100
Toluene	Qr,U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Qr,Qs,U	1	<0.00100	mg/L	1	0.00100
Xylene	Qr,Qs,U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0882	mg/L	1	0.100	88	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0888	mg/L	1	0.100	89	67.5 - 120

Sample: 343056 - MW-18

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105675	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89499	Sample Preparation:	2013-10-02	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr	1	**0.00270**	mg/L	1	0.00100
Toluene	Qr,U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Qr,Qs	1	**0.00210**	mg/L	1	0.00100
Xylene	Qr,Qs	1	**0.00250**	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0841	mg/L	1	0.100	84	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0831	mg/L	1	0.100	83	67.5 - 120

Sample: 343057 - MW-19

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105675	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89499	Sample Preparation:	2013-10-02	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr,U	1	<0.00100	mg/L	1	0.00100
Toluene	Qr,U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Qr,Qs,U	1	<0.00100	mg/L	1	0.00100
Xylene	Qr,Qs,U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0882	mg/L	1	0.100	88	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0802	mg/L	1	0.100	80	67.5 - 120

Sample: 343058 - MW-20

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105675	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89499	Sample Preparation:	2013-10-02	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	Qr,U	1	<0.00100	mg/L	1	0.00100
Toluene	Qr,U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Qr,Qs,U	1	<0.00100	mg/L	1	0.00100
Xylene	Qr,Qs,U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0790	mg/L	1	0.100	79	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0785	mg/L	1	0.100	78	67.5 - 120

Sample: 343059 - MW-21

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105675	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89499	Sample Preparation:	2013-10-02	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	Qr,U	1	<0.00100	mg/L	1	0.00100
Toluene	Qr,U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Qr,Qs,U	1	<0.00100	mg/L	1	0.00100
Xylene	Qr,Qs,U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0849	mg/L	1	0.100	85	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0777	mg/L	1	0.100	78	67.5 - 120

Method Blanks

Method Blank (1) QC Batch: 105675

QC Batch: 105675 | Date Analyzed: 2013-10-02 | Analyzed By: JS
Prep Batch: 89499 | QC Preparation: 2013-10-02 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000387	mg/L	0.001
Toluene		1	<0.000465	mg/L	0.001
Ethylbenzene		1	<0.000442	mg/L	0.001
Xylene		1	<0.000413	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0897	mg/L	1	0.100	90	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0854	mg/L	1	0.100	85	67.5 - 120

Method Blank (1) QC Batch: 105713

QC Batch: 105713 | Date Analyzed: 2013-10-03 | Analyzed By: JS
Prep Batch: 89534 | QC Preparation: 2013-10-03 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000567	mg/L	0.001
Toluene		1	<0.000518	mg/L	0.001
Ethylbenzene		1	<0.000518	mg/L	0.001
Xylene		1	<0.000548	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.105	mg/L	1	0.100	105	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.104	mg/L	1	0.100	104	74.6 - 120

Method Blank (1) QC Batch: 105741

QC Batch: 105741 | Date Analyzed: 2013-10-04 | Analyzed By: MT
Prep Batch: 89560 | QC Preparation: 2013-10-04 | Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000387	mg/L	0.001
Toluene		1	<0.000465	mg/L	0.001
Ethylbenzene		1	<0.000442	mg/L	0.001
Xylene		1	<0.000413	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0698	mg/L	1	0.100	70	68.8 - 120
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	0.0649	mg/L	1	0.100	65	67.5 - 120

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 105675 | Date Analyzed: 2013-10-02 | Analyzed By: JS
Prep Batch: 89499 | QC Preparation: 2013-10-02 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0879	mg/L	1	0.100	<0.000387	88	71.6 - 120
Toluene		1	0.0903	mg/L	1	0.100	<0.000465	90	71.6 - 120
Ethylbenzene		1	0.0899	mg/L	1	0.100	<0.000442	90	71.1 - 120
Xylene		1	0.277	mg/L	1	0.300	<0.000413	92	72.5 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0895	mg/L	1	0.100	<0.000387	90	71.6 - 120	2	20
Toluene		1	0.0919	mg/L	1	0.100	<0.000465	92	71.6 - 120	2	20
Ethylbenzene		1	0.0909	mg/L	1	0.100	<0.000442	91	71.1 - 120	1	20
Xylene		1	0.279	mg/L	1	0.300	<0.000413	93	72.5 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0951	0.0856	mg/L	1	0.100	95	86	68.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0869	0.0874	mg/L	1	0.100	87	87	67.5 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 105713 | Date Analyzed: 2013-10-03 | Analyzed By: JS
Prep Batch: 89534 | QC Preparation: 2013-10-03 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0981	mg/L	1	0.100	<0.000567	98	74.3 - 120
Toluene		1	0.0994	mg/L	1	0.100	<0.000518	99	77.6 - 120
Ethylbenzene		1	0.101	mg/L	1	0.100	<0.000518	101	78.5 - 120
Xylene		1	0.305	mg/L	1	0.300	<0.000548	102	77.6 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0998	mg/L	1	0.100	<0.000567	100	74.3 - 120	2	20
Toluene		1	0.0998	mg/L	1	0.100	<0.000518	100	77.6 - 120	0	20
Ethylbenzene		1	0.101	mg/L	1	0.100	<0.000518	101	78.5 - 120	0	20
Xylene		1	0.306	mg/L	1	0.300	<0.000548	102	77.6 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.100	0.102	mg/L	1	0.100	100	102	75.4 - 120
4-Bromofluorobenzene (4-BFB)	0.100	0.102	mg/L	1	0.100	100	102	74.6 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 105741 | Date Analyzed: 2013-10-04 | Analyzed By: MT
Prep Batch: 89560 | QC Preparation: 2013-10-04 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0851	mg/L	1	0.100	<0.000387	85	71.6 - 120
Toluene		1	0.0894	mg/L	1	0.100	<0.000465	89	71.6 - 120
Ethylbenzene		1	0.0888	mg/L	1	0.100	<0.000442	89	71.1 - 120
Xylene		1	0.273	mg/L	1	0.300	<0.000413	91	72.5 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0871	mg/L	1	0.100	<0.000387	87	71.6 - 120	2	20
Toluene		1	0.0905	mg/L	1	0.100	<0.000465	90	71.6 - 120	1	20
Ethylbenzene		1	0.0904	mg/L	1	0.100	<0.000442	90	71.1 - 120	2	20
Xylene		1	0.277	mg/L	1	0.300	<0.000413	92	72.5 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0825	0.0837	mg/L	1	0.100	82	84	68.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0856	0.0876	mg/L	1	0.100	86	88	67.5 - 120

Matrix Spike (MS-1) Spiked Sample: 343055

QC Batch: 105675 | Date Analyzed: 2013-10-02 | Analyzed By: JS
Prep Batch: 89499 | QC Preparation: 2013-10-02 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		[1]	0.0564	mg/L	1	0.100	<0.000387	56	54.2 - 120
Toluene		[1]	0.0582	mg/L	1	0.100	<0.000465	58	55.6 - 120
Ethylbenzene	[Qs]	[Qs]	0.0566	mg/L	1	0.100	<0.000442	57	59.6 - 120
Xylene	[Qs]	[Qs]	0.172	mg/L	1	0.300	<0.000413	57	61.4 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	[Qr]	[Qr]	0.0869	mg/L	1	0.100	<0.000387	87	54.2 - 120	43	20
Toluene	[Qr]	[Qr]	0.0898	mg/L	1	0.100	<0.000465	90	55.6 - 120	43	20
Ethylbenzene	[Qr]	[Qr]	0.0886	mg/L	1	0.100	<0.000442	89	59.6 - 120	44	20
Xylene	[Qr]	[Qr]	0.272	mg/L	1	0.300	<0.000413	91	61.4 - 120	45	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0881	0.0858	mg/L	1	0.1	88	86	68.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0784	0.0888	mg/L	1	0.1	78	89	67.5 - 120

Matrix Spike (MS-1) Spiked Sample: 343036

QC Batch: 105713 | Date Analyzed: 2013-10-03 | Analyzed By: JS
Prep Batch: 89534 | QC Preparation: 2013-10-03 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		[1]	1.67	mg/L	10	1.00	0.652	102	50.2 - 129
Toluene		[1]	0.969	mg/L	10	1.00	<0.00518	97	58.1 - 129
Ethylbenzene		[1]	1.07	mg/L	10	1.00	0.0484	102	58.1 - 127
Xylene		[1]	3.10	mg/L	10	3.00	0.073	101	53.1 - 128

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		[1]	1.61	mg/L	10	1.00	0.652	96	50.2 - 129	4	20
Toluene		[1]	0.902	mg/L	10	1.00	<0.00518	90	58.1 - 129	7	20

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene		1	1.00	mg/L	10	1.00	0.0484	95	58.1 - 127	7	20
Xylene		1	2.92	mg/L	10	3.00	0.073	95	53.1 - 128	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.04	1.02	mg/L	10	1	104	102	75.4 - 120
4-Bromofluorobenzene (4-BFB)	1.02	1.01	mg/L	10	1	102	101	74.6 - 120

Matrix Spike (MS-1) Spiked Sample: 343062

QC Batch: 105741 | Date Analyzed: 2013-10-04 | Analyzed By: MT
Prep Batch: 89560 | QC Preparation: 2013-10-04 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	4.86	mg/L	20	2.00	3.29	78	54.2 - 120
Toluene		1	1.69	mg/L	20	2.00	0.0231	83	55.6 - 120
Ethylbenzene		1	1.66	mg/L	20	2.00	0.0181	82	59.6 - 120
Xylene		1	5.16	mg/L	20	6.00	0.129	84	61.4 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	4.90	mg/L	20	2.00	3.29	80	54.2 - 120	1	20
Toluene		1	1.72	mg/L	20	2.00	0.0231	85	55.6 - 120	2	20
Ethylbenzene		1	1.71	mg/L	20	2.00	0.0181	84	59.6 - 120	3	20
Xylene		1	5.34	mg/L	20	6.00	0.129	87	61.4 - 120	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.52	1.78	mg/L	20	2	76	89	68.8 - 120
4-Bromofluorobenzene (4-BFB)	1.62	1.72	mg/L	20	2	81	86	67.5 - 120

Calibration Standards

Standard (CCV-1)

QC Batch: 105675 Date Analyzed: 2013-10-02 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0891	89	80 - 120	2013-10-02
Toluene		1	mg/L	0.100	0.0917	92	80 - 120	2013-10-02
Ethylbenzene		1	mg/L	0.100	0.0904	90	80 - 120	2013-10-02
Xylene		1	mg/L	0.300	0.276	92	80 - 120	2013-10-02

Standard (CCV-2)

QC Batch: 105675 Date Analyzed: 2013-10-02 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0884	88	80 - 120	2013-10-02
Toluene		1	mg/L	0.100	0.0908	91	80 - 120	2013-10-02
Ethylbenzene		1	mg/L	0.100	0.0881	88	80 - 120	2013-10-02
Xylene		1	mg/L	0.300	0.267	89	80 - 120	2013-10-02

Standard (CCV-3)

QC Batch: 105675 Date Analyzed: 2013-10-02 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0881	88	80 - 120	2013-10-02
Toluene		1	mg/L	0.100	0.0904	90	80 - 120	2013-10-02
Ethylbenzene		1	mg/L	0.100	0.0875	88	80 - 120	2013-10-02
Xylene		1	mg/L	0.300	0.267	89	80 - 120	2013-10-02

Standard (CCV-1)

QC Batch: 105713 Date Analyzed: 2013-10-03 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0987	99	80 - 120	2013-10-03
Toluene		1	mg/L	0.100	0.0998	100	80 - 120	2013-10-03
Ethylbenzene		1	mg/L	0.100	0.104	104	80 - 120	2013-10-03
Xylene		1	mg/L	0.300	0.308	103	80 - 120	2013-10-03

Standard (CCV-2)

QC Batch: 105713 Date Analyzed: 2013-10-03 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.120	120	80 - 120	2013-10-03
Toluene		1	mg/L	0.100	0.117	117	80 - 120	2013-10-03
Ethylbenzene		1	mg/L	0.100	0.118	118	80 - 120	2013-10-03
Xylene		1	mg/L	0.300	0.356	119	80 - 120	2013-10-03

Standard (CCV-3)

QC Batch: 105713 Date Analyzed: 2013-10-03 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.103	103	80 - 120	2013-10-03
Toluene		1	mg/L	0.100	0.102	102	80 - 120	2013-10-03
Ethylbenzene		1	mg/L	0.100	0.105	105	80 - 120	2013-10-03
Xylene		1	mg/L	0.300	0.317	106	80 - 120	2013-10-03

Standard (CCV-1)

QC Batch: 105741 Date Analyzed: 2013-10-04 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0850	85	80 - 120	2013-10-04
Toluene		1	mg/L	0.100	0.0880	88	80 - 120	2013-10-04
Ethylbenzene		1	mg/L	0.100	0.0869	87	80 - 120	2013-10-04
Xylene		1	mg/L	0.300	0.266	89	80 - 120	2013-10-04

Standard (CCV-2)

QC Batch: 105741 Date Analyzed: 2013-10-04 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0864	86	80 - 120	2013-10-04
Toluene		1	mg/L	0.100	0.0895	90	80 - 120	2013-10-04
Ethylbenzene		1	mg/L	0.100	0.0882	88	80 - 120	2013-10-04
Xylene		1	mg/L	0.300	0.270	90	80 - 120	2013-10-04

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

LAB Order ID # 13100204

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Company Name: Talon / LPE — **Phone #:** 806-350-8877

Address: (Street, City, Zip) 921 N. Bivins Amarillo TX 79107 — **Fax #:** 806-467-0622

Contact Person: ~~Jason Shubert~~ Brad Ivy — **E-mail:** ~~Jshubert@talonlpe.com~~ Bivy@talonlpe.com

Invoice to: (If different from above) ~~Talon / LPE, Ltd.~~ Plains (GRS # 2002-102733)

Project #: 700376.045.01 — **Project Name:** Moore to Jal #2

Project Location (including state): Lea CO., NM — **Sampler Signature:** Mark Dann

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC						Turn Around Time if different from standard	Hold
~~343047~~	~~MW-8~~	~~3~~		~~X~~				~~X~~				~~X~~		~~9.27.13~~	~~16:00~~		~~X~~																								
048	MW-10	3		X				X				X		9.27.13	14:20		X																								
049	MW-11	3		X				X				X		9.27.13	14:00		X																								
050	MW-12	3		X				X				X		9.27.13	13:40		X																								
051	MW-13	3		X				X				X		9.27.13	15:20		X																								
052	MW-14	3		X				X				X		9.27.13	13:20		X																								
053	MW-15	3		X				X				X		9.27.13	15:40		X																								
054	MW-16	3		X				X				X		9.27.13	13:00		X																								
055	MW-17	3		X				X				X		9.27.13	12:40		X																								
056	MW-18	3		X				X				X		9.27.13	15:00		X																								
057	MW-19	3		X				X				X		9.27.13	14:40		X																								

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	Talon/LPE	10/1/13	3:02					INST ___ °C OBS ___ °C COR ___ °C
			~~pm~~					INST ___ °C OBS ___ °C COR ___ °C
				Brenda Ward	TA Lubbock	10/1/13	3:02 pm	INST ~~IR~~ 3 °C OBS 2.6 °C COR 2.5 °C

LAB USE ONLY
Intact Y / N
Headspace Y N NA
Log-in-Review MM

REMARKS:

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # Courier

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LAB Order ID # 13100204

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
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1 (800) 378-1296

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200 East Sunset Rd., Suite E
El Paso, Texas 79922
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BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Brandon & Clark
3403 Industrial Blvd.
Hobbs, NM 88240
Tel (575) 392-7561
Fax (575) 392-4508

Company Name: Talon/LPE
Phone #: 806-350-8877
Address: (Street, City, Zip) 921 N. Bivins Amarillo, Tx 79107
Fax #: 806-467-0622
Contact Person: ~~Jason Shubert~~ Brad Ivy
E-mail: ~~JShubert@talonlpe.com~~ bivy@talonlpe.com
Invoice to: (If different from above) ~~Talon/LPE, Ltd.~~ Plains (SAS # 2002-10273)
Project #: 700376.045.01
Project Name: Moore to Jal #2
Project Location (including state): Lea Co., NM
Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
343058	MW-20	3		X				X				X		9.27.13	12:00
059	MW-21	3		X				X				X		9.27.13	12:20

LAB #	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC	Turn Around Time if different from standard	Hold
343058		√																			
059		X																			

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	Talon/LPE	10/1/13	3:02					INST ___ °C OBS ___ °C COR ___ °C
								INST ___ °C OBS ___ °C COR ___ °C
				Brenda Ward	TA Lubbock	10/1/13	3:02 pm	INST IR-3 °C OBS 2.6 °C COR 2.5 °C

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-in-Review MM

REMARKS:

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

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TRACEANALYSIS, INC.

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5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Brad Ivy
Talon LPE-Amarillo
921 North Bivins
Amarillo, TX, 79107

Report Date: October 14, 2013

Work Order: 13101018

Project Location: Lea Co. New Mexico
Project Name: Moore to Jal #2
Project Number: 700376.045.01
SRS #: 2002-10-2737

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
343610	MW-8	water	2013-10-09	10:30	2013-10-10

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Moore to Jal #2 were received by TraceAnalysis, Inc. on 2013-10-10 and assigned to work order 13101018. Samples for work order 13101018 were received intact without headspace and at a temperature of 2.9 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	89700	2013-10-11 at 14:24	105909	2013-10-11 at 14:24

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13101018 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 343610 - MW-8

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105909	Date Analyzed:	2013-10-11	Analyzed By:	JS
Prep Batch:	89700	Sample Preparation:	2013-10-08	Prepared By:	JS

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Benzene		1	**0.00730**		mg/L	1	0.00100
Toluene	U	1	<0.00100		mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100		mg/L	1	0.00100
Xylene	U	1	<0.00100		mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.107	mg/L	1	0.100	107	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.114	mg/L	1	0.100	114	74.6 - 120

Method Blanks

Method Blank (1) QC Batch: 105909

QC Batch:	105909	Date Analyzed:	2013-10-11	Analyzed By:	JS
Prep Batch:	89700	QC Preparation:	2013-10-11	Prepared By:	JS

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000567	mg/L	0.001
Toluene		1	<0.000518	mg/L	0.001
Ethylbenzene		1	<0.000518	mg/L	0.001
Xylene		1	<0.000548	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0968	mg/L	1	0.100	97	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.0985	mg/L	1	0.100	98	74.6 - 120

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 105909 | Date Analyzed: 2013-10-11 | Analyzed By: JS
Prep Batch: 89700 | QC Preparation: 2013-10-11 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0965	mg/L	1	0.100	<0.000567	96	74.3 - 120
Toluene		1	0.0960	mg/L	1	0.100	<0.000518	96	77.6 - 120
Ethylbenzene		1	0.0996	mg/L	1	0.100	<0.000518	100	78.5 - 120
Xylene		1	0.298	mg/L	1	0.300	<0.000548	99	77.6 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0966	mg/L	1	0.100	<0.000567	97	74.3 - 120	0	20
Toluene		1	0.0963	mg/L	1	0.100	<0.000518	96	77.6 - 120	0	20
Ethylbenzene		1	0.102	mg/L	1	0.100	<0.000518	102	78.5 - 120	2	20
Xylene		1	0.301	mg/L	1	0.300	<0.000548	100	77.6 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0955	0.0943	mg/L	1	0.100	96	94	75.4 - 120
4-Bromofluorobenzene (4-BFB)	0.0984	0.0966	mg/L	1	0.100	98	97	74.6 - 120

Matrix Spike (MS-1) Spiked Sample: 343598

QC Batch: 105909 | Date Analyzed: 2013-10-11 | Analyzed By: JS
Prep Batch: 89700 | QC Preparation: 2013-10-11 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.602	mg/L	5	0.500	0.0977	101	50.2 - 129
Toluene		1	0.860	mg/L	5	0.500	0.338	104	58.1 - 129
Ethylbenzene		1	0.616	mg/L	5	0.500	0.1	103	58.1 - 127
Xylene		1	1.77	mg/L	5	1.50	0.259	101	53.1 - 128

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		[1]	0.524	mg/L	5	0.500	0.0977	85	50.2 - 129	14	20
Toluene		[1]	0.764	mg/L	5	0.500	0.338	85	58.1 - 129	12	20
Ethylbenzene		[1]	0.537	mg/L	5	0.500	0.1	87	58.1 - 127	14	20
Xylene		[1]	1.57	mg/L	5	1.50	0.259	87	53.1 - 128	12	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.482	0.417	mg/L	5	0.5	96	83	75.4 - 120
4-Bromofluorobenzene (4-BFB)	0.501	0.442	mg/L	5	0.5	100	88	74.6 - 120

Calibration Standards

Standard (CCV-1)

QC Batch: 105909 Date Analyzed: 2013-10-11 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0977	98	80 - 120	2013-10-11
Toluene		1	mg/L	0.100	0.0968	97	80 - 120	2013-10-11
Ethylbenzene		1	mg/L	0.100	0.101	101	80 - 120	2013-10-11
Xylene		1	mg/L	0.300	0.302	101	80 - 120	2013-10-11

Standard (CCV-2)

QC Batch: 105909 Date Analyzed: 2013-10-11 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.108	108	80 - 120	2013-10-11
Toluene		1	mg/L	0.100	0.105	105	80 - 120	2013-10-11
Ethylbenzene		1	mg/L	0.100	0.110	110	80 - 120	2013-10-11
Xylene		1	mg/L	0.300	0.325	108	80 - 120	2013-10-11

Standard (CCV-3)

QC Batch: 105909 Date Analyzed: 2013-10-11 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.110	110	80 - 120	2013-10-11
Toluene		1	mg/L	0.100	0.108	108	80 - 120	2013-10-11
Ethylbenzene		1	mg/L	0.100	0.109	109	80 - 120	2013-10-11
Xylene		1	mg/L	0.300	0.330	110	80 - 120	2013-10-11

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

LAB Order ID # 13101018

Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

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Tel (972) 242-7750

Brandon & Clark
3403 Industrial Blvd.
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Tel (575) 392-7561
Fax (575) 392-4508

Company Name: Talon / LPE
Phone #: 806-350-8877
Address: (Street, City, Zip) 921 N. Bivins (Amarillo, Tx 79107)
Fax #: 806-467-0622
Contact Person: Brad Ivy
E-mail: Bivy@talon-lpe.com
Invoice to: (If different from above) Plains SRS # 2002-10273
Project #: 700376.045.01
Project Name: Moore to Jal #2
Project Location (including state): Lea Co., NM
Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
343610	MW-8	3		X				X				X		10-9-13	10:30

MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC					TAT	Turn Around Time if different from standard	Hold
X	X																							X		

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	Talon/LPE	10-9-13	10:30	RCJ	BTL	10-9-13	11:00	INST ____
								OBS ____ °C
								COR ____ °C
								INST ____
								OBS ____ °C
								COR ____ °C
								INST TRO
				TA		10/10/13	9:20	OBS 3.5 °C
								COR 2.9 °C

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-in-Review MM

REMARKS:

- [ ] Dry Weight Basis Required
- [ ] TRRP Report Required
- [ ] Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

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TRACEANALYSIS, INC.

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5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Brad Ivy
Talon LPE-Amarillo
921 North Bivins
Amarillo, TX, 79107

Report Date: January 9, 2014

Work Order: 14010305

Project Location: Lea Co. New Mexico
Project Name: Moore to Jal #2
Project Number: 700376.045.01
SRS #: 2002-10-2737

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
350577	MW-8	water	2013-12-30	14:20	2013-12-31
350578	MW-10	water	2013-12-30	14:40	2013-12-31
350579	MW-11	water	2013-12-30	15:00	2013-12-31
350580	MW-12	water	2013-12-30	15:20	2013-12-31
350581	MW-13	water	2013-12-30	15:40	2013-12-31
350582	MW-14	water	2013-12-30	16:00	2013-12-31
350583	MW-15	water	2013-12-30	16:20	2013-12-31
350584	MW-16	water	2013-12-30	16:40	2013-12-31
350585	MW-17	water	2013-12-30	17:00	2013-12-31
350586	MW-18	water	2013-12-31	08:00	2013-12-31
350587	MW-19	water	2013-12-31	08:20	2013-12-31
350588	MW-20	water	2013-12-31	08:40	2013-12-31
350589	MW-21	water	2013-12-31	09:00	2013-12-31

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Moore to Jal #2 were received by TraceAnalysis, Inc. on 2013-12-31 and assigned to work order 14010305. Samples for work order 14010305 were received damaged without headspace and at a temperature of 1.0 C. Several frozen VOAs.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	91426	2014-01-03 at 15:28	108024	2014-01-03 at 15:28
BTEX	S 8021B	91428	2014-01-03 at 15:28	108030	2014-01-03 at 15:28
BTEX	S 8021B	91507	2014-01-08 at 15:44	108141	2014-01-08 at 15:44

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 14010305 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 350577 - MW-8

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108030	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91428	Sample Preparation:	2014-01-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.00790**	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	**0.00150**	mg/L	1	0.00100
Xylene	Jb	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0762	mg/L	1	0.100	76	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0750	mg/L	1	0.100	75	67.5 - 120

Sample: 350578 - MW-10

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108030	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91428	Sample Preparation:	2014-01-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0950	mg/L	1	0.100	95	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0921	mg/L	1	0.100	92	67.5 - 120

Sample: 350579 - MW-11

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108030	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91428	Sample Preparation:	2014-01-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0944	mg/L	1	0.100	94	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0952	mg/L	1	0.100	95	67.5 - 120

Sample: 350580 - MW-12

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108030	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91428	Sample Preparation:	2014-01-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0867	mg/L	1	0.100	87	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0892	mg/L	1	0.100	89	67.5 - 120

Sample: 350581 - MW-13

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108024	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91426	Sample Preparation:	2014-01-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**18.5**	mg/L	50	0.00100
Toluene	U	1	<0.0500	mg/L	50	0.00100
Ethylbenzene		1	<0.0500	mg/L	50	0.00100
Xylene	Jb	1	<0.0500	mg/L	50	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			4.61	mg/L	50	5.00	92	68.8 - 120
4-Bromofluorobenzene (4-BFB)			5.00	mg/L	50	5.00	100	67.5 - 120

Sample: 350582 - MW-14

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108141	Date Analyzed:	2014-01-08	Analyzed By:	MT
Prep Batch:	91507	Sample Preparation:	2014-01-08	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0947	mg/L	1	0.100	95	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.0860	mg/L	1	0.100	86	74.6 - 120

Sample: 350583 - MW-15

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108141	Date Analyzed:	2014-01-08	Analyzed By:	MT
Prep Batch:	91507	Sample Preparation:	2014-01-08	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**30.7**	mg/L	200	0.00100
Toluene	U	1	<0.200	mg/L	200	0.00100
Ethylbenzene	U	1	<0.200	mg/L	200	0.00100
Xylene	U	1	<0.200	mg/L	200	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			18.3	mg/L	200	20.0	92	75.4 - 120
4-Bromofluorobenzene (4-BFB)			17.4	mg/L	200	20.0	87	74.6 - 120

Sample: 350584 - MW-16

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108141	Date Analyzed:	2014-01-08	Analyzed By:	MT
Prep Batch:	91507	Sample Preparation:	2014-01-08	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.00560**	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0937	mg/L	1	0.100	94	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.0858	mg/L	1	0.100	86	74.6 - 120

Sample: 350585 - MW-17

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108141	Date Analyzed:	2014-01-08	Analyzed By:	MT
Prep Batch:	91507	Sample Preparation:	2014-01-08	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0939	mg/L	1	0.100	94	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.0850	mg/L	1	0.100	85	74.6 - 120

Sample: 350586 - MW-18

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108024	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91426	Sample Preparation:	2014-01-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.00390**	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	**0.00230**	mg/L	1	0.00100
Xylene	B	1	**0.00350**	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0975	mg/L	1	0.100	98	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.101	mg/L	1	0.100	101	67.5 - 120

Sample: 350587 - MW-19

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108024	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91426	Sample Preparation:	2014-01-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.00140**	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	<0.00100	mg/L	1	0.00100
Xylene	Jb	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0992	mg/L	1	0.100	99	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.101	mg/L	1	0.100	101	67.5 - 120

Sample: 350588 - MW-20

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108024	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91426	Sample Preparation:	2014-01-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.00190**	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0984	mg/L	1	0.100	98	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0993	mg/L	1	0.100	99	67.5 - 120

Sample: 350589 - MW-21

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108024	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91426	Sample Preparation:	2014-01-03	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.00100**	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	Jb	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0996	mg/L	1	0.100	100	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.101	mg/L	1	0.100	101	67.5 - 120

Method Blanks

Method Blank (1) QC Batch: 108024

QC Batch: 108024 | Date Analyzed: 2014-01-03 | Analyzed By: JS
Prep Batch: 91426 | QC Preparation: 2014-01-03 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000387	mg/L	0.001
Toluene		1	<0.000465	mg/L	0.001
Ethylbenzene		1	<0.000442	mg/L	0.001
Xylene		1	0.000500	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0814	mg/L	1	0.100	81	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0806	mg/L	1	0.100	81	67.5 - 120

Method Blank (1) QC Batch: 108030

QC Batch: 108030 | Date Analyzed: 2014-01-03 | Analyzed By: JS
Prep Batch: 91428 | QC Preparation: 2014-01-03 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000387	mg/L	0.001
Toluene		1	<0.000465	mg/L	0.001
Ethylbenzene		1	<0.000442	mg/L	0.001
Xylene		1	0.000600	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.106	mg/L	1	0.100	106	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0994	mg/L	1	0.100	99	67.5 - 120

Method Blank (1) QC Batch: 108141

QC Batch: 108141 | Date Analyzed: 2014-01-08 | Analyzed By: MT
Prep Batch: 91507 | QC Preparation: 2014-01-08 | Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000567	mg/L	0.001
Toluene		1	<0.000518	mg/L	0.001
Ethylbenzene		1	<0.000518	mg/L	0.001
Xylene		1	<0.000548	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0954	mg/L	1	0.100	95	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.0861	mg/L	1	0.100	86	74.6 - 120

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 108024 | Date Analyzed: 2014-01-03 | Analyzed By: JS
Prep Batch: 91426 | QC Preparation: 2014-01-03 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0952	mg/L	1	0.100	<0.000387	95	71.6 - 120
Toluene		1	0.0974	mg/L	1	0.100	<0.000465	97	71.6 - 120
Ethylbenzene		1	0.0977	mg/L	1	0.100	<0.000442	98	71.1 - 120
Xylene		1	0.292	mg/L	1	0.300	0.0005	97	72.5 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0966	mg/L	1	0.100	<0.000387	97	71.6 - 120	1	20
Toluene		1	0.0991	mg/L	1	0.100	<0.000465	99	71.6 - 120	2	20
Ethylbenzene		1	0.0983	mg/L	1	0.100	<0.000442	98	71.1 - 120	1	20
Xylene		1	0.295	mg/L	1	0.300	0.0005	98	72.5 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0809	0.0785	mg/L	1	0.100	81	78	68.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0864	0.0834	mg/L	1	0.100	86	83	67.5 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 108030 | Date Analyzed: 2014-01-03 | Analyzed By: JS
Prep Batch: 91428 | QC Preparation: 2014-01-03 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0956	mg/L	1	0.100	<0.000387	96	71.6 - 120
Toluene		1	0.0971	mg/L	1	0.100	<0.000465	97	71.6 - 120
Ethylbenzene		1	0.0956	mg/L	1	0.100	<0.000442	96	71.1 - 120
Xylene		1	0.285	mg/L	1	0.300	0.0006	95	72.5 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0966	mg/L	1	0.100	<0.000387	97	71.6 - 120	1	20
Toluene		1	0.0991	mg/L	1	0.100	<0.000465	99	71.6 - 120	2	20
Ethylbenzene		1	0.0971	mg/L	1	0.100	<0.000442	97	71.1 - 120	2	20
Xylene		1	0.290	mg/L	1	0.300	0.0006	96	72.5 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0920	0.0923	mg/L	1	0.100	92	92	68.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0975	0.0967	mg/L	1	0.100	98	97	67.5 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 108141 | Date Analyzed: 2014-01-08 | Analyzed By: MT
Prep Batch: 91507 | QC Preparation: 2014-01-08 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.101	mg/L	1	0.100	<0.000567	101	74.3 - 120
Toluene		1	0.103	mg/L	1	0.100	<0.000518	103	77.6 - 120
Ethylbenzene		1	0.104	mg/L	1	0.100	<0.000518	104	78.5 - 120
Xylene		1	0.303	mg/L	1	0.300	<0.000548	101	77.6 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.102	mg/L	1	0.100	<0.000567	102	74.3 - 120	1	20
Toluene		1	0.103	mg/L	1	0.100	<0.000518	103	77.6 - 120	0	20
Ethylbenzene		1	0.103	mg/L	1	0.100	<0.000518	103	78.5 - 120	1	20
Xylene		1	0.300	mg/L	1	0.300	<0.000548	100	77.6 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0965	0.0955	mg/L	1	0.100	96	96	75.4 - 120
4-Bromofluorobenzene (4-BFB)	0.100	0.0972	mg/L	1	0.100	100	97	74.6 - 120

Matrix Spike (MS-1) Spiked Sample: 350598

QC Batch: 108024 | Date Analyzed: 2014-01-03 | Analyzed By: JS
Prep Batch: 91426 | QC Preparation: 2014-01-03 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0967	mg/L	1	0.100	<0.000387	97	54.2 - 120
Toluene		1	0.0977	mg/L	1	0.100	<0.000465	98	55.6 - 120
Ethylbenzene		1	0.0972	mg/L	1	0.100	<0.000442	97	59.6 - 120
Xylene		1	0.291	mg/L	1	0.300	<0.000413	97	61.4 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0983	mg/L	1	0.100	<0.000387	98	54.2 - 120	2	20
Toluene		1	0.0977	mg/L	1	0.100	<0.000465	98	55.6 - 120	0	20
Ethylbenzene		1	0.0990	mg/L	1	0.100	<0.000442	99	59.6 - 120	2	20
Xylene		1	0.297	mg/L	1	0.300	<0.000413	99	61.4 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0714	0.0875	mg/L	1	0.1	71	88	68.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0754	0.0924	mg/L	1	0.1	75	92	67.5 - 120

Matrix Spike (MS-1) Spiked Sample: 350568

QC Batch: 108030 | Date Analyzed: 2014-01-03 | Analyzed By: JS
Prep Batch: 91428 | QC Preparation: 2014-01-03 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0936	mg/L	1	0.100	<0.000387	94	54.2 - 120
Toluene		1	0.0960	mg/L	1	0.100	<0.000465	96	55.6 - 120
Ethylbenzene		1	0.0943	mg/L	1	0.100	<0.000442	94	59.6 - 120
Xylene		1	0.282	mg/L	1	0.300	<0.000413	94	61.4 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0868	mg/L	1	0.100	<0.000387	87	54.2 - 120	8	20
Toluene		1	0.0883	mg/L	1	0.100	<0.000465	88	55.6 - 120	8	20

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matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene		1	0.0874	mg/L	1	0.100	<0.000442	87	59.6 - 120	8	20
Xylene		1	0.261	mg/L	1	0.300	<0.000413	87	61.4 - 120	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0884	0.0883	mg/L	1	0.1	88	88	68.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0962	0.0956	mg/L	1	0.1	96	96	67.5 - 120

Matrix Spike (MS-1) Spiked Sample: 350552

QC Batch:	108141	Date Analyzed:	2014-01-08	Analyzed By:	MT
Prep Batch:	91507	QC Preparation:	2014-01-08	Prepared By:	MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.93	mg/L	10	1.00	0.955	98	50.2 - 129
Toluene		1	1.21	mg/L	10	1.00	0.23	98	58.1 - 129
Ethylbenzene		1	0.962	mg/L	10	1.00	<0.00518	96	58.1 - 127
Xylene		1	3.02	mg/L	10	3.00	0.203	94	53.1 - 128

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.88	mg/L	10	1.00	0.955	92	50.2 - 129	3	20
Toluene		1	1.19	mg/L	10	1.00	0.23	96	58.1 - 129	2	20
Ethylbenzene		1	0.950	mg/L	10	1.00	<0.00518	95	58.1 - 127	1	20
Xylene		1	2.97	mg/L	10	3.00	0.203	92	53.1 - 128	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.937	0.947	mg/L	10	1	94	95	75.4 - 120
4-Bromofluorobenzene (4-BFB)	0.985	0.987	mg/L	10	1	98	99	74.6 - 120

Calibration Standards

Standard (CCV-1)

QC Batch: 108024 | Date Analyzed: 2014-01-03 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0922	92	80 - 120	2014-01-03
Toluene		1	mg/L	0.100	0.0938	94	80 - 120	2014-01-03
Ethylbenzene		1	mg/L	0.100	0.0932	93	80 - 120	2014-01-03
Xylene		1	mg/L	0.300	0.279	93	80 - 120	2014-01-03

Standard (CCV-2)

QC Batch: 108024 | Date Analyzed: 2014-01-03 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0962	96	80 - 120	2014-01-03
Toluene		1	mg/L	0.100	0.0980	98	80 - 120	2014-01-03
Ethylbenzene		1	mg/L	0.100	0.0970	97	80 - 120	2014-01-03
Xylene		1	mg/L	0.300	0.290	97	80 - 120	2014-01-03

Standard (CCV-3)

QC Batch: 108024 | Date Analyzed: 2014-01-03 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0970	97	80 - 120	2014-01-03
Toluene		1	mg/L	0.100	0.0991	99	80 - 120	2014-01-03
Ethylbenzene		1	mg/L	0.100	0.0981	98	80 - 120	2014-01-03
Xylene		1	mg/L	0.300	0.294	98	80 - 120	2014-01-03

Standard (CCV-1)

QC Batch: 108030 Date Analyzed: 2014-01-03 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0951	95	80 - 120	2014-01-03
Toluene		1	mg/L	0.100	0.0967	97	80 - 120	2014-01-03
Ethylbenzene		1	mg/L	0.100	0.0949	95	80 - 120	2014-01-03
Xylene		1	mg/L	0.300	0.284	94	80 - 120	2014-01-03

Standard (CCV-2)

QC Batch: 108030 Date Analyzed: 2014-01-03 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0966	97	80 - 120	2014-01-03
Toluene		1	mg/L	0.100	0.0983	98	80 - 120	2014-01-03
Ethylbenzene		1	mg/L	0.100	0.0963	96	80 - 120	2014-01-03
Xylene		1	mg/L	0.300	0.287	96	80 - 120	2014-01-03

Standard (CCV-3)

QC Batch: 108030 Date Analyzed: 2014-01-03 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0932	93	80 - 120	2014-01-03
Toluene		1	mg/L	0.100	0.0945	94	80 - 120	2014-01-03
Ethylbenzene		1	mg/L	0.100	0.0931	93	80 - 120	2014-01-03
Xylene		1	mg/L	0.300	0.277	92	80 - 120	2014-01-03

Standard (CCV-1)

QC Batch: 108141 Date Analyzed: 2014-01-08 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.104	104	80 - 120	2014-01-08
Toluene		1	mg/L	0.100	0.105	105	80 - 120	2014-01-08
Ethylbenzene		1	mg/L	0.100	0.106	106	80 - 120	2014-01-08
Xylene		1	mg/L	0.300	0.309	103	80 - 120	2014-01-08

Standard (CCV-2)

QC Batch: 108141 Date Analyzed: 2014-01-08 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.101	101	80 - 120	2014-01-08
Toluene		1	mg/L	0.100	0.102	102	80 - 120	2014-01-08
Ethylbenzene		1	mg/L	0.100	0.102	102	80 - 120	2014-01-08
Xylene		1	mg/L	0.300	0.299	100	80 - 120	2014-01-08

Standard (CCV-3)

QC Batch: 108141 Date Analyzed: 2014-01-08 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.101	101	80 - 120	2014-01-08
Toluene		1	mg/L	0.100	0.102	102	80 - 120	2014-01-08
Ethylbenzene		1	mg/L	0.100	0.102	102	80 - 120	2014-01-08
Xylene		1	mg/L	0.300	0.300	100	80 - 120	2014-01-08

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

LAB Order ID # 14010305

Page 1 of 2

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Brandon & Clark
3403 Industrial Blvd.
Hobbs, NM 88240
Tel (575) 392-7561
Fax (575) 392-4508

Company Name: Talon LPE
Phone #: 806-467-0607
Address: (Street, City, Zip) 921 N. Bivins Amarillo, Tx 79107
Fax #: 806-467-0622
Contact Person: Brad Ivy
E-mail: bivy@talonlpe.com cjurgwst@paalp.com
Invoice to: (If different from above) Plains: SRS# 2002-10273
Project #: 700376.045.01
Project Name: 8" moore to Jal #2
Project Location (including state): Lea co., NM
Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC						Turn Around Time if different from standard	Hold
360577	MW-8	3		X				X				X		12-30-13	14:20		X																									
578	MW-10	3		X				X				X		12-30-13	14:40		X																									
579	MW-11	~~3~~ 2		X				X				X		12-30-13	15:00		X																									
580	MW-12	3		X				X				X		12-30-13	15:20		X																									
581	MW-13	3		X				X				X		12-30-13	15:40		X																									
582	MW-14	3		X				X				X		12-30-13	16:00		X																									
583	MW-15	~~3~~ 2		X				X				X		12-30-13	16:20		X																									
584	MW-16	3		X				X				X		12-30-13	16:40		X																									
585	MW-17	3		X				X				X		12-30-13	17:00		X																									
586	MW-18	3		X				X				X		12-31-13	8:00		X																									
587	MW-19	~~3~~ 2		X				X				X		12-31-13	8:20		X																									

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	Talon LPE	12.31.13	16:30	John G	Brandon Clark	12-31-13	4:30 pm	INST ___ °C OBS 3 °C COR ___ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
								INST ___ °C OBS ___ °C COR ___ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
				Brenda Ward	TH Lubbock	1/3/14	9:00	INST IR 3 °C OBS 1.6 °C COR 1.6 °C

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-in-Review

REMARKS:

- Dry Weight Basis Required
- TRRP Report Required
- Check If Special Reporting Limits Are Needed

Carrier # LS ZQ 421875

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O.

ORIGINAL COPY

LAB Order ID # 14010305

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
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Brandon & Clark
3403 Industrial Blvd.
Hobbs, NM 88240
Tel (575) 392-7561
Fax (575) 392-4508

Company Name: Talon LPE
Phone #: 806-467-0607
Address: (Street, City, Zip) 921 N. Bivins Amarillo, Tx 79107
Fax #: 806-467-0622
Contact Person: Brad Ivy
E-mail: Bivy@talonlpe.com cjbryant@paalp.com
Invoice to: (If different from above) Plains: SRS # 2002-10273
Project #: 700376.045.01
Project Name: 8" Moore to JAL #2
Project Location (including state): Lea Co., NM
Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC							Turn Around Time if different from standard	Hold
350588	MW-20	3		X				X				X		12-31-13	8:40		X																									
589	MW-21	3		X				X				X		12-31-13	9:00		X																									

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	Talon LPE	12-31-13	16:30	John G.	Brandon & Clark	12-3-13	4:30	INST ___ OBS 3 °C COR ___ °C
								INST ___ OBS ___ °C COR ___ °C
				Brenda Ward	TA Lubbock	1/3/14	9:00	INST IR-3 OBS 1.1 °C COR 1.0 °C

LAB USE ONLY
Intact Y / N
Headspace Y N NA
Log-in-Review

REMARKS:

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

ORIGINAL COPY

Carrier # 25 20421875

Analytical Report 476344

for

PLAINS ALL AMERICAN EH&S

Project Manager: Brad Ivy

Jal #2

700376.045.01

27-DEC-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-13-15-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

27-DEC-13

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

Reference: XENCO Report No(s): **476344**
Jal #2
Project Address: New Mexico

Brad Ivy:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 476344. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 476344 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 476344

PLAINS ALL AMERICAN EH&S, Midland, TX

Jal #2

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-22	S	12-17-13 08:00	- 90 ft	476344-001
MW-22	S	12-17-13 09:30	- 110 ft	476344-002
MW-23	S	12-17-13 10:30	- 90 ft	476344-003
MW-23	S	12-17-13 11:30	- 110 ft	476344-004
MW-4A	S	12-17-13 14:40	- 90 ft	476344-005
MW-4A	S	12-17-13 16:00	- 110 ft	476344-006
MW-3A	S	12-17-13 17:00	- 90 ft	476344-007
MW-3A	S	12-17-13 18:30	- 110 ft	476344-008

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 476344

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Jal #2

Project Id: 700376.045.01
Contact: Brad Ivy
Project Location: New Mexico

Date Received in Lab: Fri Dec-20-13 03:35 pm
Report Date: 27-DEC-13
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	476344-001		476344-002		476344-003		476344-004		476344-005		476344-006	
	Field Id:	MW-22		MW-22		MW-23		MW-23		MW-4A		MW-4A	
	Depth:	90 ft		110 ft		90 ft		110 ft		90 ft		110 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-17-13 08:00		Dec-17-13 09:30		Dec-17-13 10:30		Dec-17-13 11:30		Dec-17-13 14:40		Dec-17-13 16:00	
BTEX by EPA 8021	*Extracted:*	Dec-20-13 16:00		Dec-20-13 16:00		Dec-20-13 16:00		Dec-20-13 16:00		Dec-20-13 16:00		Dec-20-13 16:00	
	Analyzed:	Dec-20-13 20:27		Dec-20-13 21:15		Dec-20-13 21:31		Dec-20-13 21:47		Dec-20-13 22:03		Dec-20-13 22:18	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.000996	ND	0.000998	ND	0.000992	ND	0.00100	ND	0.000998	ND	0.000996
Toluene		ND	0.00199	ND	0.00200	ND	0.00198	ND	0.00200	ND	0.00200	ND	0.00199
Ethylbenzene		ND	0.000996	ND	0.000998	ND	0.000992	ND	0.00100	ND	0.000998	ND	0.000996
m_p-Xylenes		ND	0.00199	ND	0.00200	ND	0.00198	ND	0.00200	0.00299	0.00200	ND	0.00199
o-Xylene		ND	0.000996	ND	0.000998	ND	0.000992	ND	0.00100	ND	0.000998	ND	0.000996
Xylenes, Total		ND	0.000996	ND	0.000998	ND	0.000992	ND	0.00100	0.00299	0.000998	ND	0.000996
Total BTEX		ND	0.000996	ND	0.000998	ND	0.000992	ND	0.00100	0.00299	0.000998	ND	0.000996
Percent Moisture	*Extracted:*												
	Analyzed:	Dec-20-13 16:10		Dec-20-13 16:10		Dec-20-13 16:10		Dec-20-13 16:10		Dec-20-13 16:20		Dec-20-13 16:20	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.00	1.00	1.42	1.00	3.29	1.00	1.00	1.00	5.20	1.00	15.8	1.00
TPH by SW8015 Mod	*Extracted:*	Dec-20-13 16:00		Dec-20-13 16:00		Dec-20-13 16:00		Dec-20-13 16:00		Dec-20-13 16:00		Dec-20-13 16:00	
	Analyzed:	Dec-22-13 00:03		Dec-22-13 00:33		Dec-22-13 01:04		Dec-22-13 01:34		Dec-22-13 03:04		Dec-22-13 03:34	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	15.6	ND	15.2	ND	15.5	ND	15.1	18.8	15.8	ND	17.8
C12-C28 Diesel Range Hydrocarbons		16.3	15.6	ND	15.2	ND	15.5	18.4	15.1	132	15.8	21.1	17.8
C28-C35 Oil Range Hydrocarbons		ND	15.6	ND	15.2	ND	15.5	ND	15.1	ND	15.8	ND	17.8
Total TPH		16.3	15.6	ND	15.2	ND	15.5	18.4	15.1	151	15.8	21.1	17.8

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 476344

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Jal #2

Project Id: 700376.045.01
Contact: Brad Ivy
Project Location: New Mexico

Date Received in Lab: Fri Dec-20-13 03:35 pm
Report Date: 27-DEC-13
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	476344-007		476344-008					
	Field Id:	MW-3A		MW-3A					
	Depth:	90 ft		110 ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Dec-17-13 17:00		Dec-17-13 18:30					
BTEX by EPA 8021	***Extracted:***	Dec-20-13 16:00		Dec-20-13 16:00					
	Analyzed:	Dec-20-13 22:34		Dec-20-13 22:49					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		ND	0.000996	ND	0.000996				
Toluene		ND	0.00199	ND	0.00199				
Ethylbenzene		ND	0.000996	ND	0.000996				
m_p-Xylenes		0.0705	0.00199	0.00301	0.00199				
o-Xylene		0.0233	0.000996	0.00123	0.000996				
Xylenes, Total		0.0938	0.000996	0.00424	0.000996				
Total BTEX		0.0938	0.000996	0.00424	0.000996				
Percent Moisture	***Extracted:***								
	Analyzed:	Dec-20-13 16:20		Dec-20-13 16:20					
	Units/RL:	%	RL	%	RL				
Percent Moisture		6.00	1.00	9.28	1.00				
TPH by SW8015 Mod	***Extracted:***	Dec-20-13 16:00		Dec-20-13 16:00					
	Analyzed:	Dec-22-13 04:03		Dec-22-13 04:31					
	Units/RL:	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		297	15.9	30.7	16.5				
C12-C28 Diesel Range Hydrocarbons		1470	15.9	149	16.5				
C28-C35 Oil Range Hydrocarbons		47.7	15.9	ND	16.5				
Total TPH		1810	15.9	180	16.5				

Kelsey Brooks
Project Manager

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: Jal #2

Work Orders : 476344,

Project ID: 700376.045.01

Lab Batch #: 930559 **Sample:** 476344-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/20/13 20:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 930559 **Sample:** 476344-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/20/13 21:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	

Lab Batch #: 930559 **Sample:** 476344-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/20/13 21:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 930559 **Sample:** 476344-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/20/13 21:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

Lab Batch #: 930559 **Sample:** 476344-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/20/13 22:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Jal #2

Work Orders : 476344,

Project ID: 700376.045.01

Lab Batch #: 930559 **Sample:** 476344-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/20/13 22:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 930559 **Sample:** 476344-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/20/13 22:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0317	0.0300	106	80-120	

Lab Batch #: 930559 **Sample:** 476344-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/20/13 22:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Lab Batch #: 930772 **Sample:** 476344-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/13 00:03

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.6	119	70-135	
o-Terphenyl	58.7	49.8	118	70-135	

Lab Batch #: 930772 **Sample:** 476344-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/13 00:33

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	49.7	50.0	99	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Jal #2

Work Orders : 476344,

Project ID: 700376.045.01

Lab Batch #: 930772 **Sample:** 476344-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/13 01:04

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	99.9	113	70-135	
o-Terphenyl	55.1	50.0	110	70-135	

Lab Batch #: 930772 **Sample:** 476344-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/13 01:34

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.9	99.8	98	70-135	
o-Terphenyl	45.8	49.9	92	70-135	

Lab Batch #: 930772 **Sample:** 476344-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/13 03:04

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.8	105	70-135	
o-Terphenyl	52.6	49.9	105	70-135	

Lab Batch #: 930772 **Sample:** 476344-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/13 03:34

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	99.9	122	70-135	
o-Terphenyl	60.3	50.0	121	70-135	

Lab Batch #: 930772 **Sample:** 476344-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/13 04:03

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	99.6	126	70-135	
o-Terphenyl	52.1	49.8	105	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Jal #2

Work Orders : 476344,

Project ID: 700376.045.01

Lab Batch #: 930772 **Sample:** 476344-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/13 04:31

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.8	118	70-135	
o-Terphenyl	58.6	49.9	117	70-135	

Lab Batch #: 930559 **Sample:** 648874-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/20/13 17:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0260	0.0300	87	80-120	

Lab Batch #: 930772 **Sample:** 648883-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/13 19:27

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	60.5	50.0	121	70-135	

Lab Batch #: 930559 **Sample:** 648874-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/20/13 16:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 930772 **Sample:** 648883-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/13 18:24

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	63.4	50.0	127	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Jal #2

Work Orders : 476344,

Project ID: 700376.045.01

Lab Batch #: 930559 **Sample:** 648874-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/20/13 16:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 930772 **Sample:** 648883-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/13 18:56

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	52.1	50.0	104	70-135	

Lab Batch #: 930559 **Sample:** 476306-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/20/13 16:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	

Lab Batch #: 930772 **Sample:** 476341-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/13 20:29

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.8	114	70-135	
o-Terphenyl	64.0	49.9	128	70-135	

Lab Batch #: 930772 **Sample:** 476341-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/13 21:00

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.8	111	70-135	
o-Terphenyl	64.0	49.9	128	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: Jal #2

Work Order #: 476344 **Project ID:** 700376.045.01

Analyst: ARM **Date Prepared:** 12/20/2013 **Date Analyzed:** 12/20/2013

Lab Batch ID: 930559 **Sample:** 648874-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0980	98	0.100	0.0986	99	1	70-130	35	
Toluene	<0.00200	0.100	0.0964	96	0.100	0.0984	98	2	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0930	93	0.100	0.0942	94	1	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.188	94	0.200	0.191	96	2	70-135	35	
o-Xylene	<0.00100	0.100	0.0953	95	0.100	0.0965	97	1	71-133	35	

Analyst: ARM **Date Prepared:** 12/20/2013 **Date Analyzed:** 12/21/2013

Lab Batch ID: 930772 **Sample:** 648883-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	942	94	1000	956	96	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1010	101	1000	1030	103	2	70-135	35	

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

Form 3 - MS Recoveries

Project Name: Jal #2

Work Order #: 476344

Lab Batch #: 930559 **Project ID:** 700376.045.01

Date Analyzed: 12/20/2013 **Date Prepared:** 12/20/2013 **Analyst:** ARM

QC- Sample ID: 476306-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Benzene	<0.00102	0.102	0.0893	88	70-130	
Toluene	<0.00204	0.102	0.0877	86	70-130	
Ethylbenzene	<0.00102	0.102	0.0833	82	71-129	
m_p-Xylenes	<0.00204	0.204	0.167	82	70-135	
o-Xylene	<0.00102	0.102	0.0837	82	71-133	

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

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: Jal #2

Work Order # : 476344 **Project ID:** 700376.045.01

Lab Batch ID: 930772 **QC- Sample ID:** 476341-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/21/2013 **Date Prepared:** 12/20/2013 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.7	1050	1030	98	1050	957	91	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	34.5	1050	995	91	1050	990	91	1	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Sample Duplicate Recovery

Project Name: Jal #2

Work Order #: 476344

Lab Batch #: 930480 **Project ID:** 700376.045.01

Date Analyzed: 12/20/2013 13:50 **Date Prepared:** 12/20/2013 **Analyst:** WRU

QC- Sample ID: 476319-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	24.5	27.2	10	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 12/20/2013 03:35:00 PM

Work Order #: 476344

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**N/A**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 12/20/2013

Checklist reviewed by: Kelsey Brooks Date: 12/20/2013

XENCO Laboratories
B&A Laboratories, Inc.

☐ 4143 Greenbriar Drive, Stafford, Tx 77477 281-240-4200
☐ 5332 Blackberry Drive, San Antonio, Tx 78238 210-509-3334
☐ 9701 Harry Hines Blvd., Dallas, Tx 75220 214-902-0300
☐ 12600 West I-20 East, Odessa, Tx 79765 432-569-1800
☐ 842 Cantwell, Corpus Christi, Tx 78408 361-884-0371

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

Serial #: 239664 Page 1 of 1

Company-City: Talon LPE **Phone:**

Lab Only: 476344

Proj Name-Location: JAL #2 ☒ Previously done at XENCO **Project ID:** 700376.045.01

TAT: ASAP 5h 12h 24h 48h 3d 5d (circled) 7d 10d 21d Standard TAT is project specific. It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Proj State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other
Proj. Manager (PM): Brad Ivy

e-Mail Results to ☒ PM and **Fax No:**
WTB Brad Ivy Camille Bryant

Invoice to ☒ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O
Bill to: Plains SRS # 2002-10273

Quote/Pricing: **P.O No:** ☐ Call for P.O.

Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW TRRP

QAPP Per-Contract CLP AFCEE NAVY DOE DOD USACE OTHER:

Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)

Sampler Name: Wesley Barron Signature: [signature]

Analyses: VOCs: Full-List BTEX-MTBE (circled) EtOH Oxyg VOHs VOAs (NM); VOC's PP TCL DW Appdx-1 Appdx-2 CALL Other:; PAHs; TX-1005 DRO GRO (circled) MA EPH MA VPH (NM); SVOCs: Full-List DW BN&AE TCL PP Appdx-2 CALL; OC Pesticides PCBs Herbicides OP Pesticides; Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx 2; SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs); EDB / DBCP

TAT ASAP 5h 12h 24h 48h 3d 5d (circled) 7d 10d 21d; Addn: PAH above mg/L W, mg/Kg S Highest Hit; Hold Samples (Surcharges will apply and are pre-approved); Sample Clean-ups are pre-approved as needed

#	Sample ID	Sampling Date	Time	Depth ft' In" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VOCs (BTEX)	TX-1005
1	MW-22 90'	12-17-13	0800	90	S		X	1	4oz	G		X	X
2	MW-22 110'	12-17-13	0930	110	S		X	1	4oz	G		X	X
3	MW-23 90'	12-17-13	1030	90	S		X	1	4oz	G		X	X
4	MW-23 110'	12-17-13	1130	110	S		X	1	4oz	G		X	X
5	MW-4A 90'	12-17-13	1440	90	S		X	1	4oz	G		X	X
6	MW-4A 110'	12-17-13	1600	110	S		X	1	4oz	G		X	X
7	MW-3A 90'	12-17-13	1700	90	S		X	1	4oz	G		X	X
8	MW-3A 110'	12-17-13	1830	110	S		X	1	4oz	G		X	X
9													
10													

Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1) [signature]	12-20-13 1335	2) [signature]	12-20-13 15:35
3)		4)	
5)		6)	

Total Containers per COC: 8 Cooler Temp: 3+1=4°C

Upon signings this COC you accept XENCO terms and Conditions unless otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool,<4C) (**C**), None (**NA**), See Label (**L**), Other (**O**) ____________

Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (V), Other ____________ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)

Matrix: Air (**A**), Product (**P**), Solid(**S**), Water (**W**), Liquid (**L**)

Committed to Excellence in Service and Quality www.xenco.com

Notice: Signature of this document and relinquishment of these samples constitutes a valid purchase order from client company to Xenco Laboratories and its affiliates, subcontractors and assigns under Xenco's standard terms and conditions of service unless previoiusly negotiated under a fully executed client contract.

APPENDIX D

NMOCD C-141

October 23, 2003

Mr. Larry Johnson
Environmental Engineer
New Mexico Oil Conservation Division
1625 North French
Hobbs, New Mexico 88240

Subject: EOTT Initial C-141

Re: 8" Moore to Jal #2, 2002-10273
UL- J, NW¼ of the SE¼ of Section 16 T17S R37E
Latitude 32 49' 56.61"N and Longitude 103 15' 08.47"W
State of New Mexico

Dear Mr. Larry Johnson,

Environmental Plus, Inc. (EPI), on behalf of Mr. Frank Hernandez, EOTT, submits the attached New Mexico Oil Conservation Division (NMOCD) form C-141 for the above referenced leak site located on land owned by the State of New Mexico, approximately ~11 miles southeast of Hobbs, New Mexico . The New Mexico Tech Geo-Information Database records an average groundwater depth of ~66'bgs. The attached site information and metrics form ranks the site in accordance with the NMOCD Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993).

A remediation plan will be developed and submitted for NMOCD approval and will address issues identified during delineation of the vertical and horizontal extents of contamination of the Constituents of Concern (CoCs), i.e., Chloride, Total Petroleum Hydrocarbon EPA method 8015m (TPH^{8015m}), Benzene, and BTEX, i.e., the mass sum of Benzene, Toluene, Ethyl Benzene, and Xylenes. The contaminated soil is not exempted from RCRA 40 CFR Part 261.

If there are any questions please call Mr. Ben Miller or myself at the office or at 505.390.0288 and 505.390.7864, respectively or Mr. Frank Hernandez at 915.638.3799. All official communication should be addressed to:

Mr. Frank Hernandez
EOTT
PO Box 1660 5805 East Highway 80
Midland, Texas 79702

Sincerely,

Pat McCasland
EPI Technical Services Manager

cc: Frank Hernandez, EOTT, w/enclosure
Ben Miller, EPI Vice President and General Manager
Sherry Miller, EPI President
file

P.O. BOX 1558 ••• 2100 WEST AVE. O ••• EUNICE, NEW MEXICO 88231
TELEPHONE 505•394•3481 FAX 505•394•2601

EOTT Site Information and Metrics	Incident Date: **10-22-02 @ 5:00 Pm**	NMOCD Notified: 10-23-02 @ 7:00 AM

SITE: 8" Moore to Jal #2	Assigned Site Reference #: 2002-10273
Company: EOTT	
Street Address: PO Box 1660	
Mailing Address: 5805 East Highway 80	
City, State, Zip: Midland, Texas 79702	
Representative: Frank Hernandez	
Representative Telephone: 915.638.3799	
Telephone:	
Fluid volume released (bbls): 25 bbls	Recovered (bbls): 0 bbls
>25 bbls: Notify NMOCD verbally within 24 hrs and submit form C-141 within 15 days. (Also applies to unauthorized releases >500 mcf Natural Gas)	
5-25 bbls: Submit form C-141 within 15 days (Also applies to unauthorized releases of 50-500 mcf Natural Gas)	
Leak, Spill, or Pit (LSP) Name: 8" Moore to Jal #2	
Source of contamination: 8" Steel Pipeline	
Land Owner, i.e., BLM, ST, Fee, Other: State of New Mexico	
LSP Dimensions ~160' x 40'	
LSP Area: 5,794 sqft ft^2	
Location of Reference Point (RP)	
Location distance and direction from RP	
Latitude: 32 49' 56.61"N	
Longitude: 103 15' 08.47"W	
Elevation above mean sea level:	
Feet from South Section Line	
Feet from West Section Line	
Location- Unit or ¼¼: NW¼ of the SE¼	Unit Letter: J
Location- Section: 16	
Location- Township: T17S	
Location- Range: R37E	
Surface water body within 1000 ' radius of site: none	
Surface water body within 1000 ' radius of site:	
Domestic water wells within 1000' radius of site: none	
Domestic water wells within 1000' radius of site:	
Agricultural water wells within 1000' radius of site: none	
Agricultural water wells within 1000' radius of site:	
Public water supply wells within 1000' radius of site: none	
Public water supply wells within 1000' radius of site:	
Depth from land surface to ground water (DG) ~66'bgs	
Depth of contamination (DC) – ?	
Depth to ground water (DG – DC = DtGW) - 0	

1. Ground Water	**2. Wellhead Protection Area**	**3. Distance to Surface Water Body**
If Depth to GW <50 feet: *20 points*	If <1000' from water source, or;<200' from private domestic water source: *20 points*	<200 horizontal feet: *20 points*
If Depth to GW 50 to 99 feet: *10 points*		200-100 horizontal feet: *10 points*
If Depth to GW >100 feet: *0 points*	If >1000' from water source, or; >200' from private domestic water source: *0 points*	>1000 horizontal feet: *0 points*
Ground water Score = 20	*Wellhead Protection Area Score= 0*	*Surface Water Score= 0*
Site Rank (1+2+3) = 20		

Total Site Ranking Score and Acceptable Concentrations

Parameter	>19	10-19	0-9
Benzene[1]	10 ppm	10 ppm	10 ppm
BTEX[1]	50 ppm	50 ppm	50 ppm
TPH	100 ppm	1000 ppm	5000 ppm

[1]100 ppm field VOC headspace measurement may be substituted for lab analysis

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company **EOTT**	Contact **Frank Hernandez**
Address PO Box 1660 5805 East Highway 80 Midland, Texas 79702	Telephone No. 915.638.3799
Facility Name 8" Moore to Jal #2	Facility Type 8" Steel Pipeline

Surface Owner State of New Mexico	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	
16	16	T17S	R37E					County: Lea Lat. 32 49' 56.61"N Lon. 103 15' 08.47"W

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release 25 bbls barrels	Volume Recovered 0 bbls barrels
Source of Release 8" Steel Pipeline	Date and Hour of Occurrence EOTT	Date and Hour of Discovery 10-22-02 @ 7:00 PM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Larry Johnson	
By Whom? Pat McCasland, EPI	Date and Hour 10-23-02 @ 7:00 AM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. NA	

If a Watercourse was Impacted, Describe Fully.*
NA

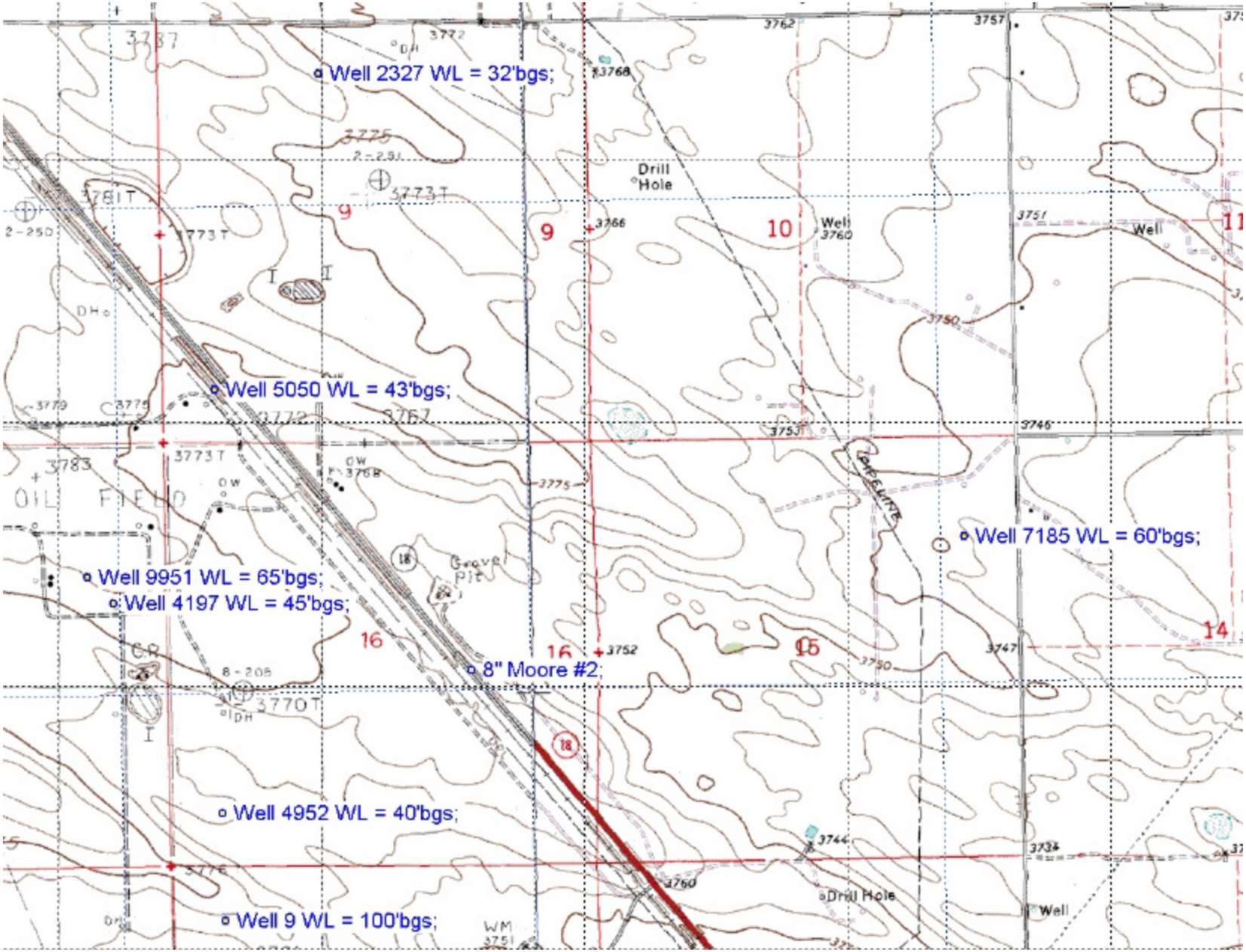
Describe Cause of Problem and Remedial Action Taken.*
8" Steel Pipeline Site will be delineated to determine the vertical and horizontal extents of contamination. Contaminated soil will be blended on site or disposed of.

Describe Area Affected and Cleanup Action Taken.*
5,794 sqft ~160' x 40' Site will be delineated to determine the vertical and horizontal extents of contamination. Co ntaminated soil will be blended on site or disposed of. Remedial Goals: TPH 8015m = 100 mg/Kg, Benzene = 10 mg/Kg, and BTEX, i.e., the mass sum of Benzene, Ethyl Benzene, Toluene, and Xylenes = 50 mg/Kg.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	**OIL CONSERVATION DIVISION**	
Printed Name: Frank Hernandez	Approved by District Supervisor:	
Title: District Environmental Supervisor	Approval Date:	Expiration Date:
Date: October 23, 2003 Phone: 915.638.3799	Conditions of Approval:	Attached ☐

* Attach Additional Sheets If Necessary


Well 2327 WL = 32'bgs;
Well 5050 WL = 43'bgs;
Well 9951 WL = 65'bgs;
Well 4197 WL = 45'bgs;
Well 7185 WL = 60'bgs;
8" Moore #2;
Well 4952 WL = 40'bgs;
Well 9 WL = 100'bgs;
Drill Hole
Drill Hole
Well
Well
Gravel Pit
OIL FIELD
PIPELINE


Spill Area Perimeter
New Mexico State Road 18
Caliche Access Road
Leak Origin
Fence
Railroad Bed
Pipeline
EOTT ENERGY
LLC
8" MOORE TO
JAL #2
#2002-10273
UL-J SEC 16
T17S R37E
AFFECTED AREA
~5794 SQFT
N
SCALE 1:1,500
0
150.0
FEET
UNIVERSAL TRANSVERSE MERCATOR
13 NORTH
NAD 1983 HPGN (NEW MEXICO)
8MOORE#2.COR
7/21/2003


OCT 22 2002


OCT 22 2002