AP - _9_____

ANNUAL MONITORING REPORT

Year(s):

_____2011_____

2011
ANNUAL MONITORING REPORT

HDO-90-23

NE ¼, NW ¼, SECTION 6, TOWNSHIP 20 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO
PLAINS SRS NUMBER: HDO-90-23
NMOCD REFERENCE AP-009

PREPARED FOR:

PLAINS MARKETING, L.P.
333 Clay Street, Suite 1600
Houston, Texas 77002

NOVA
safety and environmental

PREPARED BY:

NOVA Safety and Environmental
2057 Commerce Street
Midland, Texas 79703

March 2012

Ronald K. Rounsaville
Senior Project Manager

Brittan K. Byerly, P.G.
President

PLAINS
ALL AMERICAN

March 22, 2012

RECEIVED

MAR 26 2012

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

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

Re: Plains All American – 2011 Annual Monitoring Reports
15 Sites in Lea County, New Mexico

Dear Mr. Hansen:

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

34 Junc. to Lea Sta.	1R-0386	Section 21, Township 20 South, Range 37 East, Lea County
34 Junction South	1R-0456	Section 02, Township 17 South, Range 36 East, Lea County
Bob Durham	AP-0016	Section 32, Township 19 South, Range 37 East, Lea County
HDO-90-23	AP-009	Section 06, Township 20 South, Range 37 East, Lea County
LF-59	1R-0103	Section 32, Township 19 South, Range 37 East, Lea County
Monument 2	1R-0110	Section 06, Township 20 South, Range 37 East, Lea County Section 07, Township 20 South, Range 37 East, Lea, County
Monument 10	1R-0119	Section 30, Township 19 South, Range 37 East, Lea County
Monument 17	1R-123	Section 29, Township 19 South, Range 37 East, Lea County
Monument 18	1R-0124	Section 07, Township 20 South, Range 37 East, Lea County
SPS-11	GW-0140	Section 18, Township 18 South, Range 36 East, Lea County
Texaco Skelly F	1R-0420	Section 11, Township 21 South, Range 37 East, Lea County
TNM 97-04	GW-0294	Section 11, Township 16 South, Range 35 East, Lea County
TNM 97-17	AP-017	Section 21, Township 20 South, Range 37 East, Lea County
TNM 97-18	AP-0013	Section 28, Township 20 South, Range 37 East, Lea County
TNM 98-05A	AP-12	Section 26, Township 21 South, Range 37 East, Lea County

Nova Safety and Environmental (Nova) 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 Nova 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.

PLAINS
ALL AMERICAN

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

Sincerely,

Jason Henry
Remediation Coordinator
Plains All American

CC: Geoff Leking, NMOCD, Hobbs, NM

Enclosures

TABLE OF CONTENTS

INTRODUCTION

On behalf of Plains Marketing, L.P. (Plains), NOVA Safety and Environmental (NOVA) is pleased to submit this Annual Monitoring Report in compliance with the New Mexico Oil Conservation Division (NMOCD) letter of May 1998, requiring submittal of an Annual Monitoring Report by April 1 of each year. Beginning on May 29, 2004, project management responsibilities were assumed by NOVA. The HDO-90-23 Site, which was formally the responsibility of Texas New Mexico Pipe Line Company (TNM), is now the responsibility of Plains. This report is intended to be viewed as a complete document with text, figures, tables and appendices. The report presents the results of the quarterly groundwater monitoring events conducted in calendar year 2011 only. However, historic data tables as well as 2011 laboratory analytical reports are provided on the enclosed data disk. A Site Location Map is provided as Figure 1.

Groundwater monitoring was conducted during each quarter of 2011 to assess the levels and extent of dissolved phase constituents and Phase Separated Hydrocarbon (PSH). Each groundwater monitoring event consisted of measuring static water levels in monitor wells, checking for the presence of PSH on the water column and purging and sampling of each well exhibiting sufficient recharge. Monitor wells containing a thickness of PSH greater than 0.01 foot were not sampled.

SITE DESCRIPTION AND BACKGROUND INFORMATION

The site is located in the NE 1/4 of the NW 1/4 of Section 6, Township 20 South, Range 37 East in Lea County. The HDO 90-23 release was discovered by TNM personnel and reported on March 27, 1990. According to the release report, an estimated 750 barrels of crude oil were released and 550 barrels were recovered. The release occurred from a 14-inch TNM pipeline and was attributed to structural failure associated with internal pipeline corrosion. Limited excavation occurred around the release point to repair the pipeline. The Release Notification and Corrective Action (Form C-141) is provided as Appendix A.

In February 1998, nine soil borings were advanced and five monitoring wells were installed by a previous contractor to assess the subsurface conditions. In September 1999, three additional monitor wells were installed. In the fall of 2002, monitor wells MW-9 through MW-15 were installed. In November 2004, NOVA installed two additional monitor wells (MW-16 and MW-17) to further delineate the southeast extent of the dissolved phase plume.

On August 9, 2005, NOVA personnel discovered and documented a leaking produced water pipeline approximately 100 feet north of monitor well MW-3. The leaking pipeline was reported to NMOCD, Hobbs District Office on the same day. The pipeline was identified as a Mar Oil and Gas (MAR) Pipeline. A MAR employee was successful in closing an off site valve to stop the produced water flow. On August 12, 2005, MAR employees began limited excavation surrounding monitor well MW-3, stockpiling the soil on site. Since the activities of August 2005, the excavated soil has been stockpiled on site.

In February 2007, NOVA personnel discovered and documented a crude oil release approximately 500 feet northwest of monitor well MW-15. The release was associated with a production pump jack operated by MAR and to date this release has not been remediated.

On November 12, 2009, NOVA personnel advanced five soil borings in the vicinity of monitor wells MW-6, MW-2 and RW-1 and RW-2 to determine current soil concentration conditions. A report documenting the Soil Investigation Activities was submitted to the NMOCD under separate cover in March 2011.

On June 22, 2010, Plains received approval from the NMOCD for soil closure activities and requested additional assessment activities with the advancement of two soil borings, each in the vicinity of monitor well MW-2 to at least 40 feet below ground surface (bgs), to be conducted in June or July 2011 and in November 2012.

On July 7, 2011, as per the NMOCD directive dated June 22, 2010, NOVA personnel advanced one soil boring in the vicinity of monitor well MW-2 to a depth of approximately 40 ft. bgs. The results of the soil boring investigation were documented in a Soil Evaluation Letter Report submitted to the NMOCD in August 2011.

Currently, thirteen groundwater monitor wells (MW-2 through MW-6, MW-8, MW-9 and MW-12 through MW-17) and two product recovery wells (RW-1 and RW-2) are onsite.

FIELD ACTIVITIES

Product Recovery Efforts

A measurable thickness of PSH was detected in monitor wells MW-2 and MW-6 during all four sampling events of 2011. A maximum PSH thickness of 2.10 feet was recorded in monitor well MW-6 on November 21, 2011 and is shown on Table 1. The average thickness of PSH in wells MW-2 and MW-6 during 2011 was 1.23 feet. Approximately 61 gallons (1.45 barrels) of PSH were recovered manually from the site during the 2011 reporting period.

During the reporting period, Plains contracted a third party to conduct a Mobile Dual Phase Extraction (MDPE) event at the HDO-90-23 site to assist in PSH recovery efforts. On September 15, 2011, one, 12-hour MDPE event was conducted on monitor wells MW-2 and MW-6 and recovery wells RW-1 and RW-2. During the MDPE event, approximately 12 gallons of liquid PSH and 62.20 equivalent off-gas vapor gallons were recovered. Approximately 1,029.2 gallons (24.5 barrels) of PSH have been recovered through automated, mechanical (periodic MDPE events) and manual recovery methods since project inception.

Groundwater Monitoring

Quarterly monitoring events for the reporting period were performed according to the following sampling schedule, which was approved by the NMOCD in correspondence dated April 28, 2004 and amended by NMOCD correspondence dated June 21, 2005.

NMOCD Approved Sampling Schedule	
MW-1	Plugged and Abandoned
MW-2	Quarterly
MW-3	Quarterly
MW-4	Semi-Annually
MW-5	Semi-Annually
MW-6	Quarterly
MW-7	Plugged and Abandoned
MW-8	Annually
MW-9	Semi-Annually
MW-10	Plugged and Abandoned
MW-11	Plugged and Abandoned
MW-12	Quarterly
MW-13	Quarterly
MW-14	Quarterly
MW-15	Quarterly
MW-16	Annually
MW-17	Quarterly
RW-1	Quarterly
RW-2	Quarterly

The site monitor wells were gauged and sampled on February 15, May 5, August 4, and November 21, 2011. During each sampling event, sampled monitor wells were purged a minimum of three well volumes of water or until the wells were dry using a PVC bailer or electrical Grundfos pump. Groundwater was allowed to recharge and samples were collected using disposable Teflon samplers. Water samples were placed in clean glass containers provided by the laboratory and placed on ice in the field. Purge water was collected in a polystyrene tank and disposed of at a licensed disposal facility. Locations of the monitor wells and the inferred groundwater gradient, which were constructed utilizing measurements collected during the four quarterly monitoring events, are depicted on Figures 2A through 2D. Groundwater elevation data for 2011 is provided as Table 1. Historic groundwater elevation data beginning at project inception is provided on the enclosed data disk.

The most recent Groundwater Gradient Map, Figure 2D, indicates a general gradient of approximately 0.0029 feet/foot to the southeast as measured between monitor wells MW-9 and MW-17. This is consistent with data presented on Figures 2A through 2C from earlier in the year. The corrected groundwater elevation has ranged between 3,418.65 and 3,419.66 feet above mean sea level, in recovery well RW-1 on September 23, 2011 and monitor well MW-9 on May 5, 2011.

LABORATORY RESULTS

Groundwater samples obtained during the quarterly sampling events of 2011 were delivered to Trace Analysis, Inc. in Midland, Texas for determination of Benzene, Toluene, Ethylbenzene and Xylene (BTEX) constituent concentrations by EPA Method 8021B. Polynuclear Aromatic Hydrocarbons (PAH) analysis was conducted on groundwater samples collected from monitor wells MW-3, MW-14 and RW-1 during 2011. Monitor wells MW-2 and MW-6 were not sampled due to the presence of PSH. Based upon historic PAH analytical data, only those wells exhibiting elevated constituent concentrations above WQCC standards are sampled, with the exclusion of those wells containing measurable PSH thicknesses. A listing of BTEX constituent

concentrations for 2011 are summarized in Table 2 and the Historic PAH constituent concentrations are summarized in Table 3. Copies of the laboratory reports generated for 2011 are provided on the enclosed data disk. The quarterly groundwater sample results for BTEX constituent concentrations are depicted on Figures 3A through 3D.

Monitor well MW-2 is sampled on a quarterly schedule. Monitor well MW-2 was not sampled during the 1st, 2nd, 3rd and 4th quarters of the reporting period, due to the presence of PSH in the monitor well. PSH thicknesses of 0.08 feet, 0.12 feet, 0.55 feet and 0.45 feet were reported during the 1st, 2nd, 3rd and 4th quarters of 2011, respectively. PAH analysis was not conducted during the 4th quarter sampling event, due to the presence of PSH.

Monitor well MW-3 is sampled on a quarterly schedule. Analytical results indicate benzene concentrations ranged from <0.001 mg/L during the 1st quarter to 0.0566 mg/L during the 3rd quarter of 2011. Benzene concentrations were above NMOCD regulatory standards of 0.01 mg/L, during 2nd, 3rd and 4th quarters of the reporting period. Toluene concentrations were below the MDL of <0.001 mg/L and the NMOCD regulatory standard of 0.75 mg/L during all four quarters of the reporting period. Ethyl-benzene concentrations ranged from <0.001 mg/L during the 1st and 2nd quarters to 0.0081 mg/L during the 3rd quarter of 2011. Ethyl-benzene concentrations were below NMOCD regulatory standard of 0.75 mg/L, during all four quarters of the reporting period. Xylene concentrations were below NMOCD regulatory standard of 0.62 mg/L, during all four quarters of the reporting period. PAH analysis during the 4th quarter sampling event indicated elevated concentrations above MDLs for dibenzofuran (0.001 mg/L), which is below WQCC standards.

Monitor well MW-4 is sampled on a semi-annual schedule and was not sampled during the 2nd quarter sampling event due to an obstruction in the well casing. Analytical results indicate BTEX constituent concentrations were below the MDL and NMOCD regulatory standards for each BTEX constituent during the 4th quarter sampling event. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last thirty-two consecutive quarters. PAH analysis was not conducted during the 4th quarter sampling event.

Monitor well MW-5 is sampled on a semi-annual schedule and analytical results indicate BTEX constituent concentrations were below the MDL and NMOCD regulatory standards for each BTEX constituent during the 2nd and 4th quarter sampling events. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last twenty-two consecutive quarters. PAH analysis was not conducted during the 4th quarter sampling event.

Monitor well MW-6 is monitored on a quarterly schedule. Monitor well MW-6 was not sampled during the 1st, 2nd, 3rd and 4th quarters of the reporting period, due to the presence of PSH in the monitor well. PSH thicknesses of 1.26 feet, 1.22 feet, 2.02 feet and 2.10 feet were reported during the 1st, 2nd, 3rd and 4th quarters of 2011, respectively. PAH analysis was not conducted during the 4th quarter sampling event, due to the presence of PSH.

Monitor well MW-8 is sampled on an annual schedule and analytical results indicate BTEX constituent concentrations were below the MDL and NMOCD regulatory standards for each

BTEX constituent during the 4th quarter sampling event. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last thirty-eight consecutive quarters. PAH analysis was not conducted during the 4th quarter sampling event.

Monitor well MW-9 is sampled on a semi-annual schedule and analytical results indicate BTEX constituent concentrations were below the MDL and NMOCD regulatory standards for each BTEX constituent during the 2nd and 4th quarters of 2011. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last thirty-three consecutive quarters. PAH analysis was not conducted during the 4th quarter sampling event.

Monitor well MW-12 is sampled on a quarterly schedule and analytical results indicate BTEX constituent concentrations were below the MDL and NMOCD regulatory standards for each BTEX constituent during all four quarters of 2011. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last thirty-seven consecutive quarters. PAH analysis was not conducted during the 4th quarter sampling event.

Monitor well MW-13 is sampled on a quarterly schedule and analytical results indicate BTEX constituent concentrations were below the MDL and NMOCD regulatory standards for each BTEX constituent during all four quarters of 2011. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last twenty-seven consecutive quarters. PAH analysis was not conducted during the 4th quarter sampling event.

Monitor well MW-14 is sampled on a quarterly schedule and analytical results indicate BTEX constituent concentrations were below the MDL and NMOCD regulatory standards for each BTEX constituent during all four quarters of 2011. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last seventeen consecutive quarters. PAH analysis during the 4th quarter sampling event indicated elevated concentrations above MDLs for dibenzofuran (0.00215 mg/L), which is below WQCC standards.

Monitor well MW-15 is sampled on a quarterly schedule and analytical results indicate BTEX constituent concentrations were below the MDL and NMOCD regulatory standards for each BTEX constituent during all four quarters of 2011. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last sixteen consecutive quarters. PAH analysis was not conducted during the 4th quarter sampling event.

Monitor well MW-16 is sampled on an annual schedule and analytical results indicate BTEX constituent concentrations were below the MDL and NMOCD regulatory standards for each BTEX constituent during the 4th quarter sampling event. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last twenty-three consecutive quarters. PAH analysis was not conducted during the 4th quarter sampling event.

Monitor well MW-17 is sampled on a quarterly schedule and analytical results indicate BTEX constituent concentrations were below the MDL and NMOCD regulatory standards for each BTEX constituent during all four quarters of 2011. The analytical results indicate BTEX constituent concentrations have been below NMOCD regulatory standards for the last twenty-eight consecutive quarters. PAH analysis was not conducted during the 4th quarter sampling event.

Recovery well RW-1 is sampled on a quarterly schedule and analytical results indicate benzene concentrations ranged from 0.174 mg/L during the 4th quarter to 0.434 mg/L during the 1st and 2nd quarters of 2011. Benzene concentrations were above NMOCD regulatory standards all four quarters of the reporting period. Toluene concentrations were below the MDL and NMOCD regulatory standards during all four quarters of the reporting period. Ethyl-benzene concentrations ranged from <0.005 mg/L during the 2nd and 3rd quarters to 0.0047 mg/L during the 4th quarter of 2011. Ethyl-benzene concentrations were below NMOCD regulatory standards during all four quarters of the reporting period. Xylene concentrations ranged from <0.005 mg/L during the 2nd and 3rd quarters to 0.0.202 mg/L during the 1st quarter of 2011. Xylene concentrations were below NMOCD regulatory standards during all four quarters of the reporting period. PAH analysis during the 4th quarter sampling event indicated elevated concentrations above MDLs for naphthalene (0.000437 mg/L), 1-methylnaphthalene (0.000184 mg/L), phenanthrene (0.000265 mg/L), fluorene (0.000419 mg/L) and dibenzofuran (0.000625 mg/L), which are below WQCC standards.

Recovery well RW-2 is sampled on a quarterly schedule and analytical results indicate benzene concentrations ranged from 0.0108 mg/L during the 4th quarter to 0.2330 mg/L during the 3rd quarter of 2011. Benzene concentrations were above NMOCD regulatory standards during all four quarters of the reporting period. Toluene concentrations were below the MDL and NMOCD regulatory standards during all four quarters of the reporting period. Ethyl-benzene concentrations ranged from <0.001 mg/L during the 1st and 2nd quarters to 0.0646 mg/L during the 3rd quarter of 2011. Ethyl-benzene concentrations were below NMOCD regulatory standards during all four quarters of the reporting period. Xylene concentrations ranged from <0.001 mg/L during the 1st and 2nd quarters to 0.0710 mg/L during the 3rd quarter of 2011. Xylene concentrations were below NMOCD regulatory standards during all four quarters of the reporting period. PAH analysis was not conducted during the 4th quarter sampling event.

Laboratory analytical results were compared to NMOCD regulatory limits based on the New Mexico groundwater standards found in section 20.6.2.3103 of the New Mexico Administrative Code.

SUMMARY

This report presents the results of monitoring activities for the annual monitoring period of 2011. Currently, there are thirteen groundwater monitor wells (MW-2 through MW-6, MW-8, MW-9 and MW-12 through MW-17) and two recovery wells (RW-1 and RW-2) on-site. The most recent Groundwater Gradient Map, Figure 2D, indicates a general gradient of approximately 0.0029 feet/foot to the southeast.

Monitor wells MW-2 and MW-6 contained PSH and was not sampled during the 1st, 2nd, 3rd and 4th quarters of the reporting period. The average thickness of PSH in monitor and recovery wells containing PSH during 2011 was 1.23 feet.

Approximately 61 gallons (1.45 barrels) of PSH were recovered manually from the site during the 2011 reporting period.

During the reporting period, Plains contracted a third party to conduct a Mobile Dual Phase Extraction (MDPE) event at the HDO-90-23 site to assist in PSH recovery efforts. On September 15, 2011, one, 12-hour MDPE event was conducted on monitor wells MW-2 and MW-6 and recovery wells RW-1 and RW-2. During the MDPE event, approximately 12 gallons of liquid PSH and 62.20 equivalent off-gas vapor gallons were recovered. Approximately 1,029.2 gallons (24.5 barrels) of PSH have been recovered through automated, mechanical (periodic MDPE events) and manual recovery methods since project inception.

Review of laboratory analytical results generated from analysis of the groundwater samples obtained during the 2011 monitoring period indicates BTEX constituent concentrations are below NMOCD regulatory standards in ten of the thirteen monitor wells and two recovery wells with an increasing trend in benzene concentrations observed in MW-3 and a decreasing trend in MW-14 and RW-1 as compared to 2010 analytical results. Review of PAH analysis indicates a decreasing trend in constituent concentrations in monitor wells MW-3, MW-14 and recovery well RW-1.

ANTICIPATED ACTIONS

Quarterly groundwater monitoring, sampling and manual weekly PSH recovery will continue in 2012. An Annual Monitoring Report will be submitted to the NMOCD by April 1, 2013.

Based on the results of the PAH analysis over the past several years, PAH analysis will be conducted on monitor wells MW-3, MW-14 and recovery well RW-1, and MW-2 and MW-6 when free of PSH, which have historically exhibited elevated constituents near or above the WQCC standards.

One soil boring will be advanced in the vicinity of monitor well MW-2 to a depth of at least 40 feet bgs during November 2012 to comply with an NMOCD directive letter dated June 22, 2010.

LIMITATIONS

NOVA has prepared this Annual Monitoring Report to the best of its ability. No other warranty, expressed or implied, is made or intended.

NOVA has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. NOVA has not conducted an independent examination of the facts contained in referenced materials and statements. We have presumed the genuineness of the documents and that the information provided in documents or statements is true and accurate. NOVA has prepared this report, in a professional manner, using the degree of skill and care exercised by similar environmental consultants. NOVA also notes that the facts

and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of Plains. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of NOVA and/or Plains.

DISTRIBUTION

Copy 1 Ed Hansen
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

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New Mexico Energy, Minerals and Natural Resources Department
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jpdann@paalp.com

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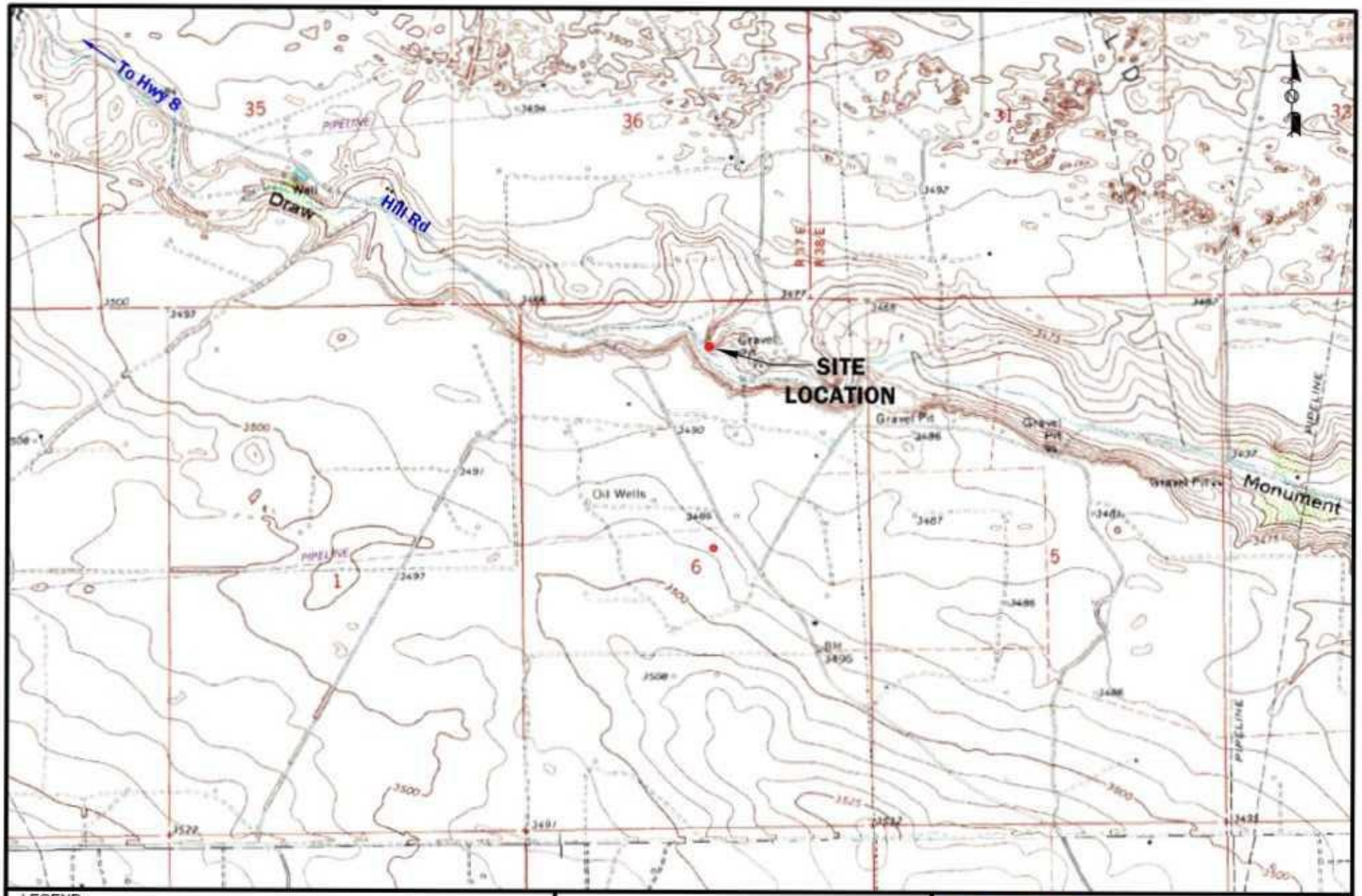
2057 Commerce Street
Midland, TX 79703
rrounsaville@novatraining.cc

Figures



LEGEND:

2000 1000 0 1000 2000

Distance in Feet

NMOCD Reference #AP-009

Figure 1
Site Location Map
HDO 90-23
Plains Marketing, L.P.
Lea County, NM

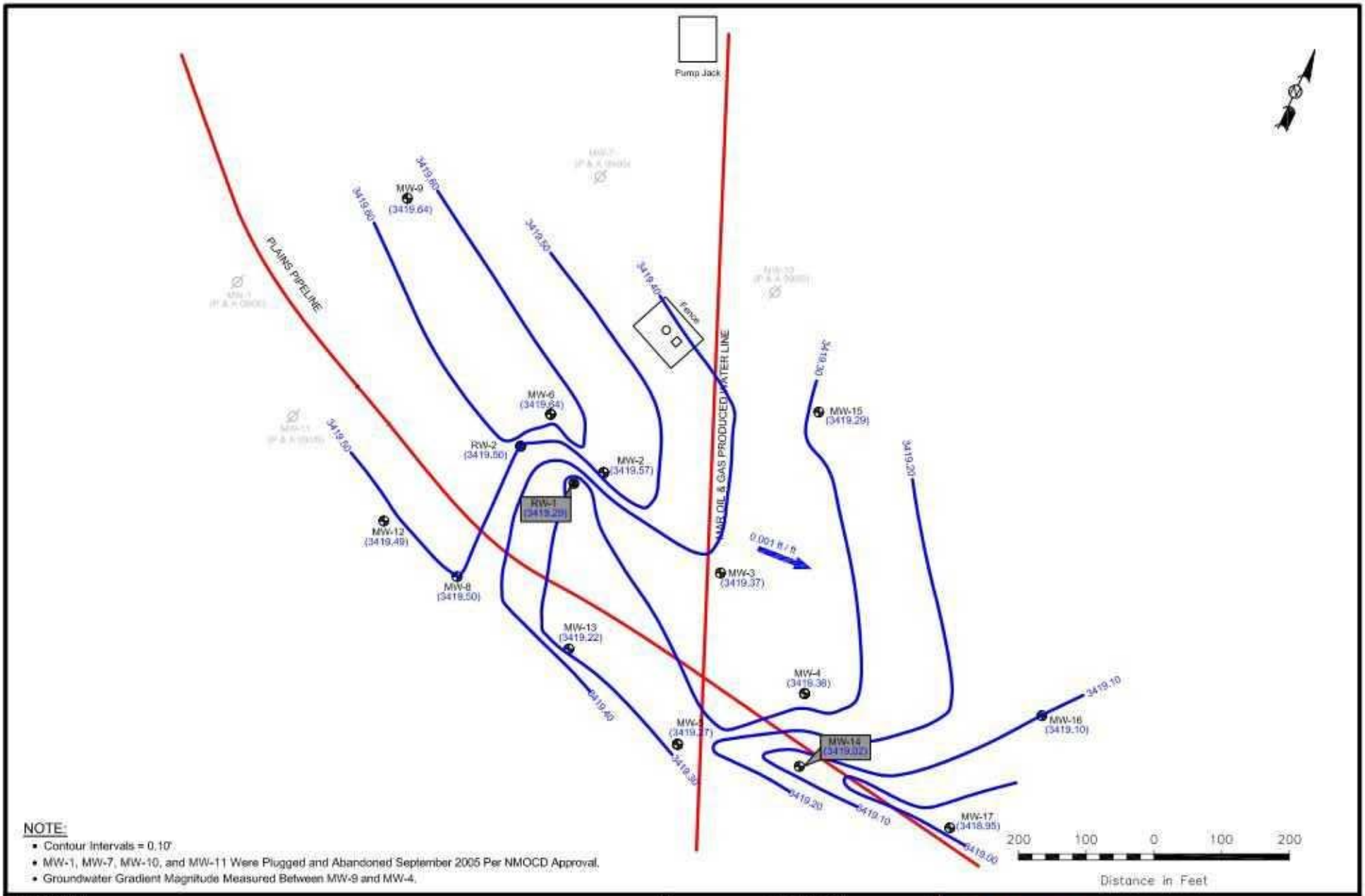
NOVA safety and environmental

2057 Commerce Drive
Midland, Texas 79703
432.520.7720

www.novasafetyandenvironmental.com

February 28, 2011	Scale: 1" = 2000'	CAD By: TA	Checked By: RKR

LATITUDE & LONGITUDE COORDINATES: N 32° 31' 12.1" W 103° 12' 2.86"



NOTE:

- Contour Intervals = 0.10'
- MW-1, MW-7, MW-10, and MW-11 Were Plugged and Abandoned September 2005 Per NMOCD Approval.
- Groundwater Gradient Magnitude Measured Between MW-9 and MW-4.

LEGEND:

- Monitor Well Location
- Recovery Well Location
- Plugged and Abandoned Well
- Pipeline
- Groundwater Elevation Contour
- (3418.72) Groundwater Elevation in feet
- 0.001 ft/ft Inferred Groundwater Gradient and Magnitude

Figure 2A
Inferred Groundwater Gradient Map
(2/15/11)
NMOCD Reference # AP-009
Plains Marketing, L.P.
HDO 90-23
Lea County, NM

NOVA safety and environmental
2057 Commerce Drive
Midland, Texas 79703
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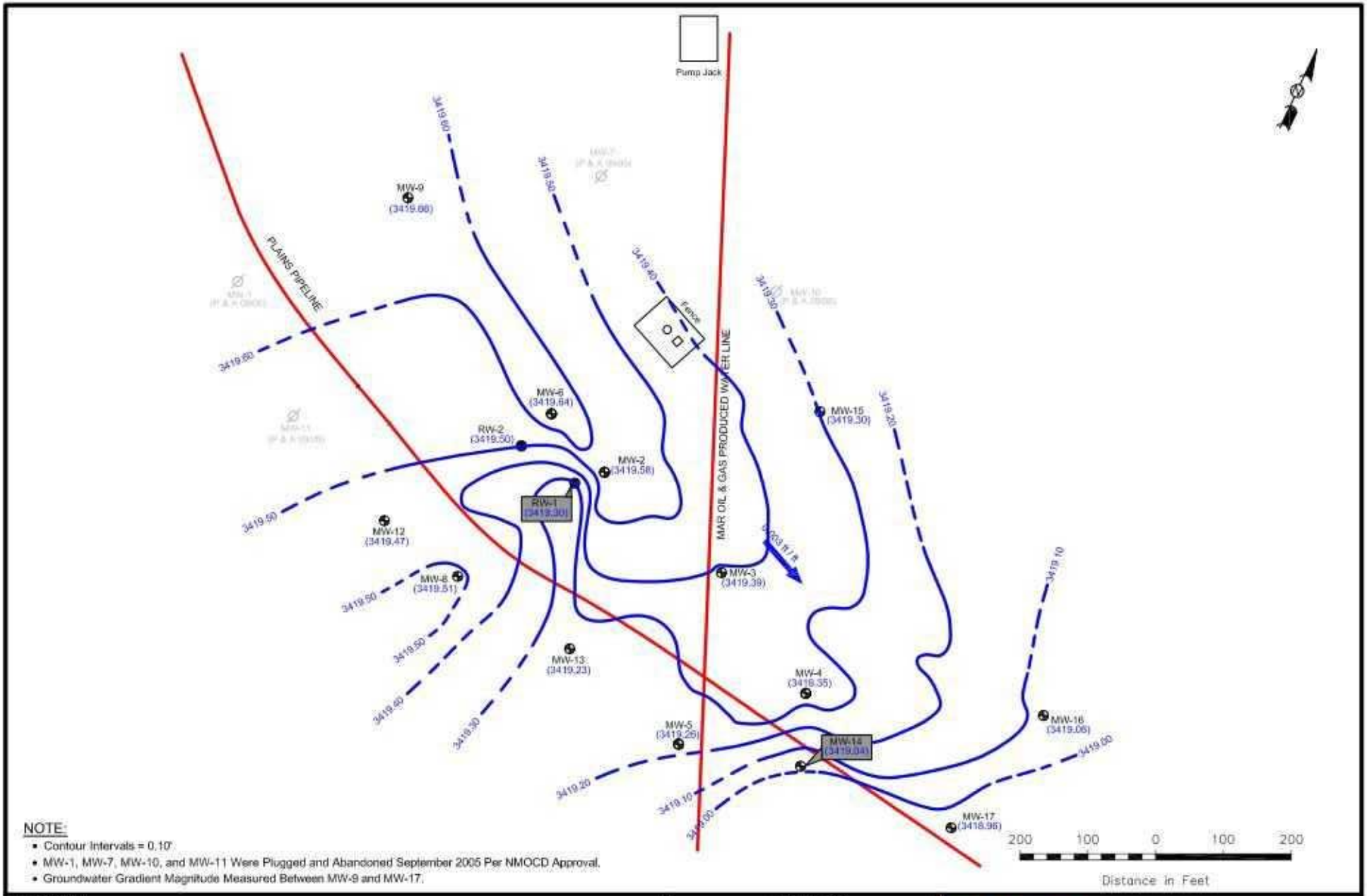
April 6, 2011	Scale: 1" = 200'	CAD By: TA	Checked By: RKR
Lat. N32° 44' 50.3" Long. W103° 23' 38.5"		NW1/4 SE1/4 Sec 18 T18S R36E	



NOTE:

- Contour Intervals = 0.10'
- MW-1, MW-7, MW-10, and MW-11 Were Plugged and Abandoned September 2005 Per NMOCD Approval.
- Groundwater Gradient Magnitude Measured Between MW-9 and MW-17.

LEGEND:

- Monitor Well Location
- Recovery Well Location
- Plugged and Abandoned Well
- Pipeline
- Groundwater Elevation Contour
- (3418.72) Groundwater Elevation in feet
- 0.003 ft/ft Inferred Groundwater Gradient and Magnitude

Figure 2B
Inferred Groundwater Gradient Map
(5/5/2011)
NMOCD Reference # AP-009
Plains Marketing, L.P.
HDO 90-23
Lea County, NM

NOVA safety and environmental
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Midland, Texas 79703
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June 3, 2011	Scale: 1" = 200'	CAD By: TA	Checked By: RKR
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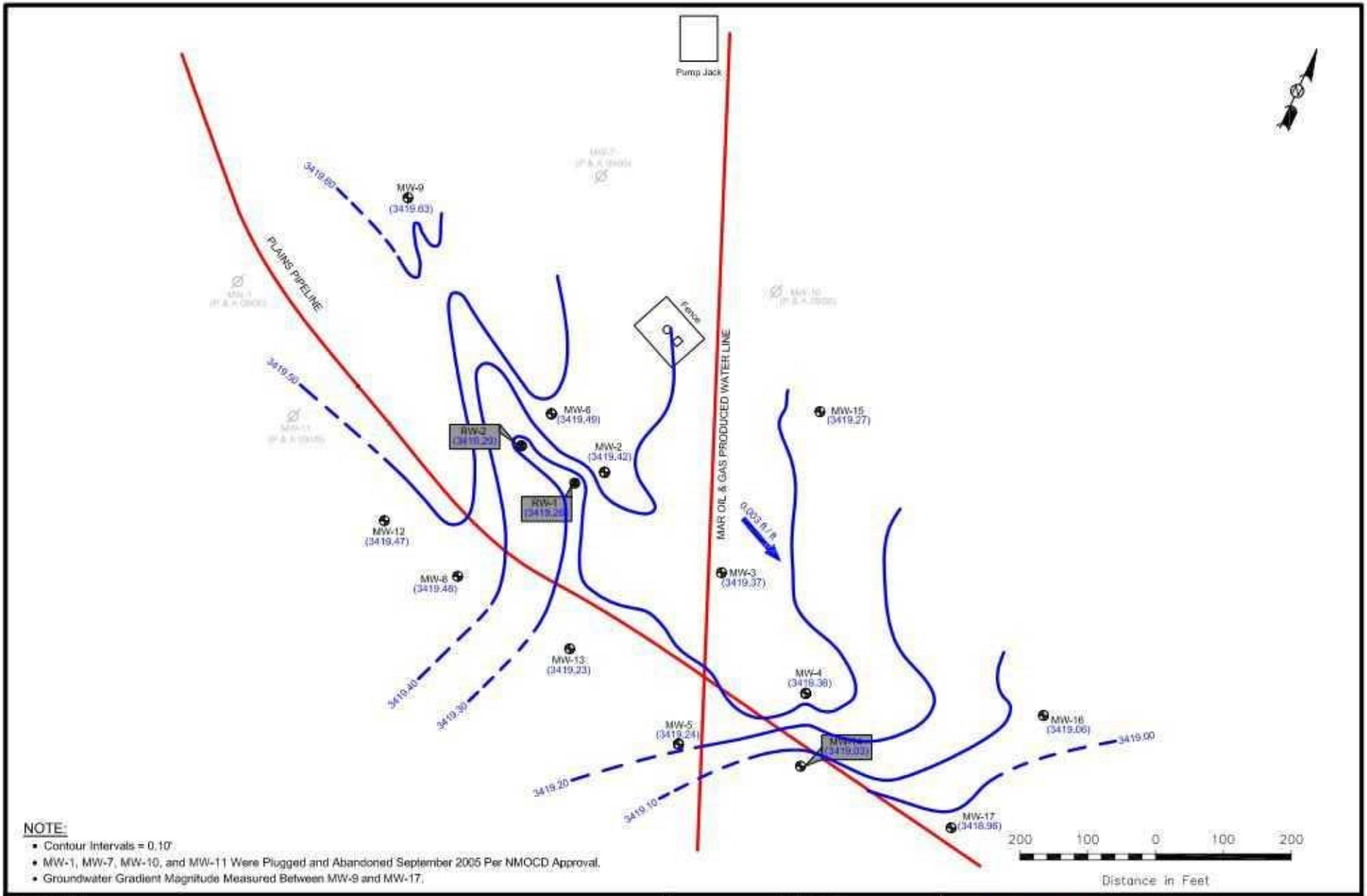

NOTE:

- Contour Intervals = 0.10'
- MW-1, MW-7, MW-10, and MW-11 Were Plugged and Abandoned September 2005 Per NMOCD Approval.
- Groundwater Gradient Magnitude Measured Between MW-9 and MW-17.

LEGEND:

- Monitor Well Location
- Recovery Well Location
- Plugged and Abandoned Well
- Pipeline
- Groundwater Elevation Contour
- (3418.72) Groundwater Elevation in feet
- 0.003 ft/ft Inferred Groundwater Gradient and Magnitude

Figure 2C
Inferred Groundwater Gradient Map
(8/4/2011)
NMOCD Reference # AP-009
Plains Marketing, L.P.
HDO 90-23
Lea County, NM

NOVA safety and environmental
2057 Commerce Drive
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September 13, 2011	Scale: 1" = 200'	CAD By: TA	Checked By: RKR
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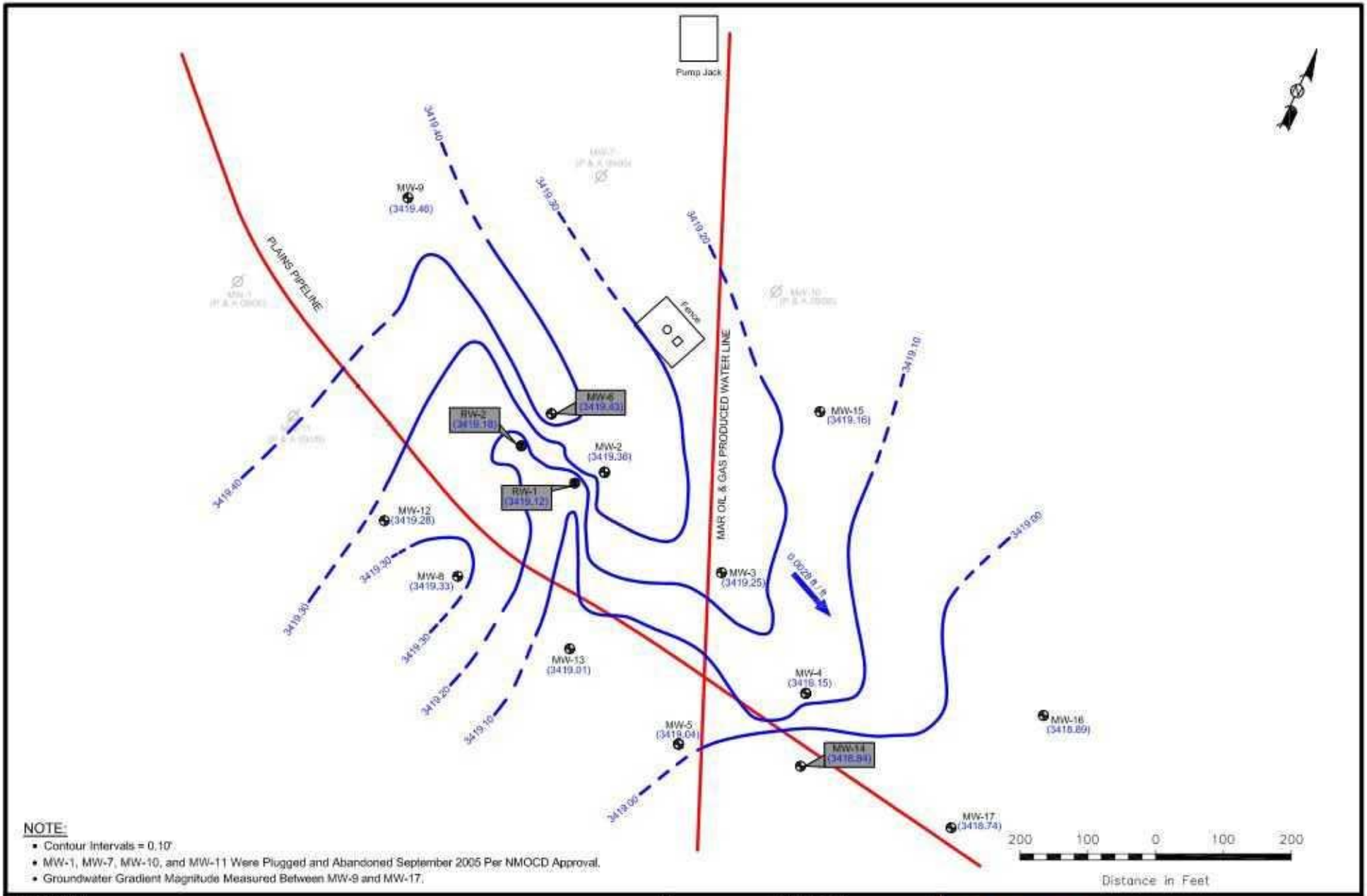


NOTE:

- Contour Intervals = 0.10'
- MW-1, MW-7, MW-10, and MW-11 Were Plugged and Abandoned September 2005 Per NMOCD Approval.
- Groundwater Gradient Magnitude Measured Between MW-9 and MW-17.

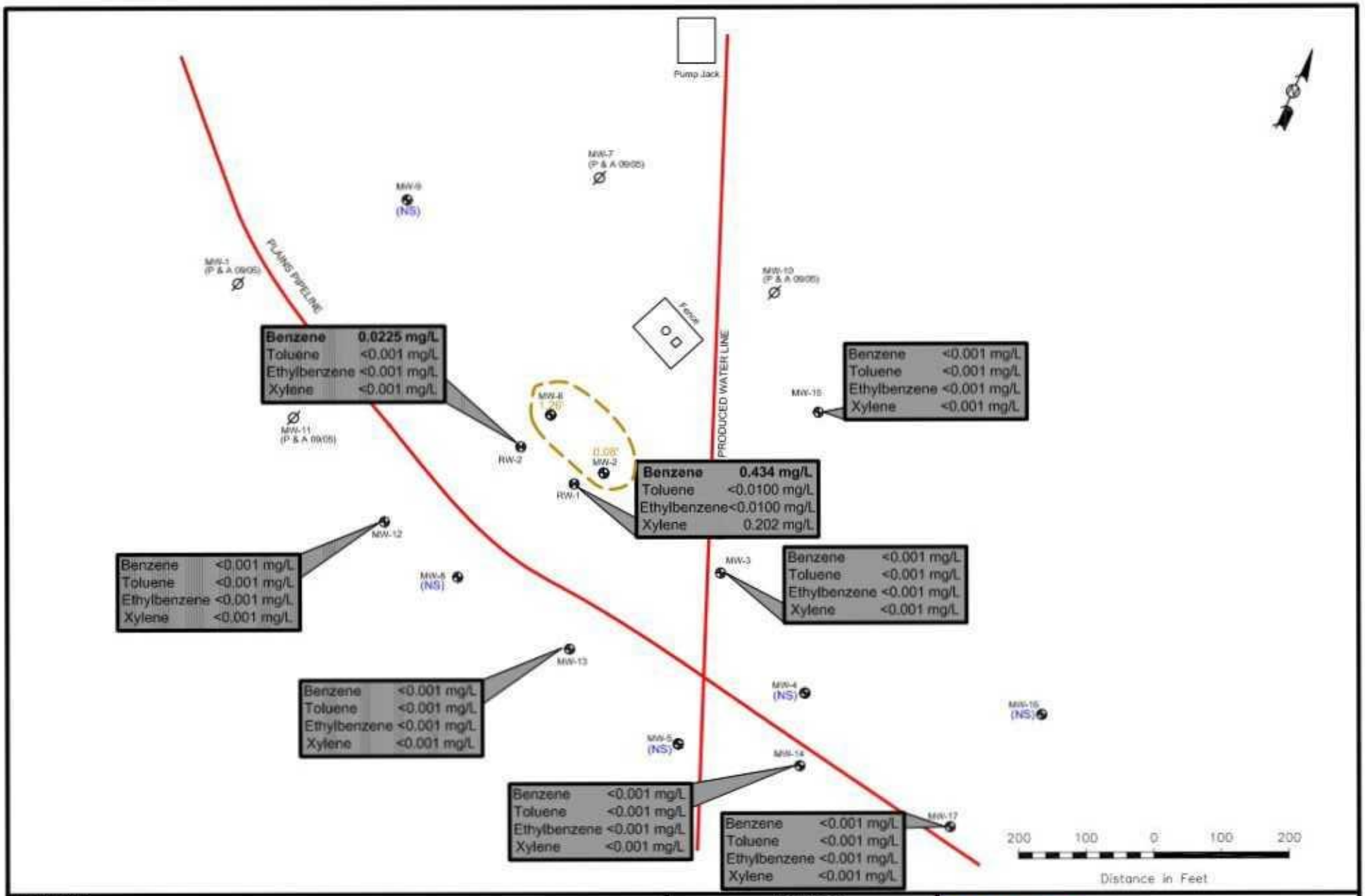
LEGEND:

- Monitor Well Location
- Recovery Well Location
- Plugged and Abandoned Well
- Pipeline
- Groundwater Elevation Contour
- (3418.72) Groundwater Elevation in feet
- Inferred Groundwater Gradient and Magnitude

Figure 2D
Inferred Groundwater Gradient Map
(11/21/2011)
NMOCD Reference # AP-009
Plains Marketing, L.P.
HDO 90-23
Lea County, NM

NOVA safety and environmental
2057 Commerce Drive
Midland, Texas 79703
432.520.7720
www.novasafetyandenvironmental.com

December 5, 2011	Scale: 1" = 200'	CAD By: TA	Checked By: RKR
Lat. N32° 44' 50.3" Long. W103° 23' 38.5"		NW1/4 SE1/4 Sec 18 T18S R36E	



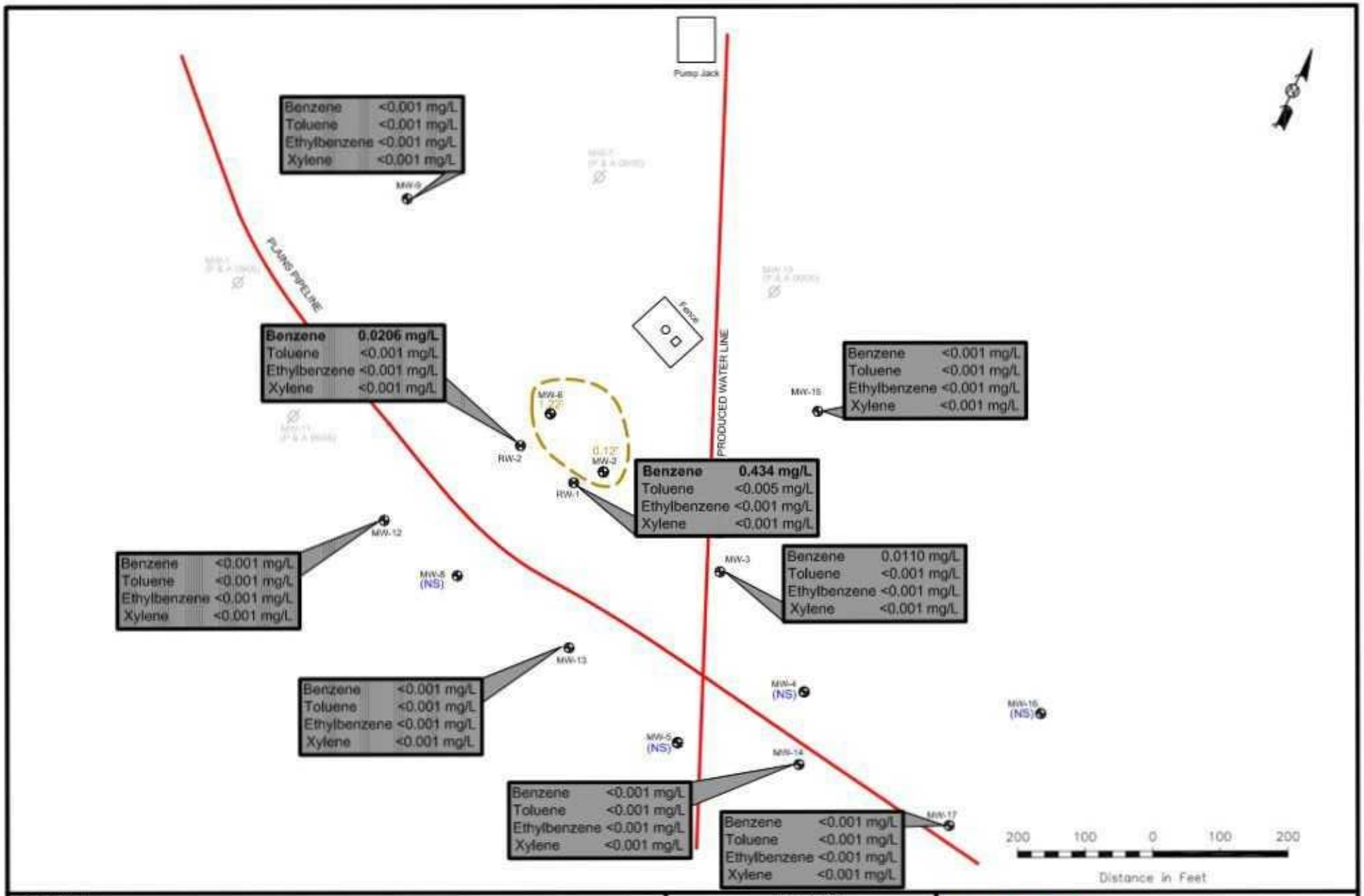
LEGEND:

- Monitor Well Location
- Inferred PSH Extent
- Pipeline
- (NS) Not Sampled
- 0.18' PSH Thickness (in feet)
- <0.001 Constituent Concentration (mg/L)
- (NA) PSH Thickness Data Unavailable

Figure 3A
Inferred PSH and Dissolved Phase Extent Map (2/15/11)
NMOCD Reference # AP-009
Plains Marketing, L.P.
HDO 90-23
Lea County, NM

NOVA safety and environmental
2057 Commerce Drive
Midland, Texas 79703
432.520.7720
www.novasafetyandenvironmental.com

April 6, 2011	Scale: 1" = 200'	CAD By: TA	Checked By: RKR
Lat. N32° 44' 50.3", Long. W103° 23' 38.5"	NW1/4 SE1/4 Sec 18 T18S R36E		



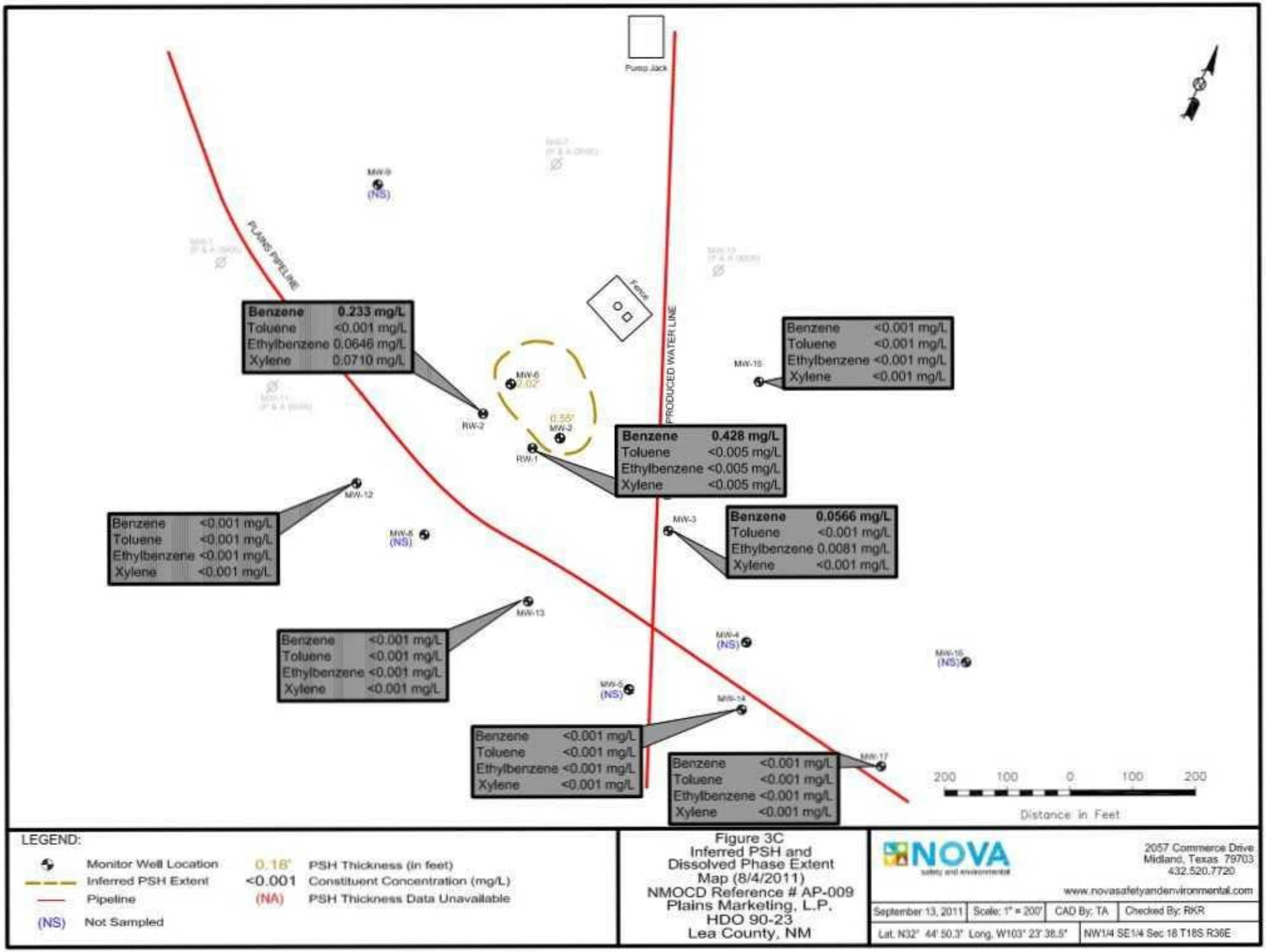
LEGEND:

- Monitor Well Location
- Inferred PSH Extent
- Pipeline
- (NS) Not Sampled
- 0.18' PSH Thickness (in feet)
- <0.001 Constituent Concentration (mg/L)
- (NA) PSH Thickness Data Unavailable

Figure 3B
Inferred PSH and
Dissolved Phase Extent
Map (5/5/2011)
NMOCD Reference # AP-009
Plains Marketing, L.P.
HDO 90-23
Lea County, NM

NOVA safety and environmental
2057 Commerce Drive
Midland, Texas 79703
432.520.7720
www.novasafetyandenvironmental.com

June 6, 2011	Scale: 1" = 200'	CAD By: TA	Checked By: RKR
Lat. N32° 44' 50.3" Long. W103° 23' 38.5"	NW1/4 SE1/4 Sec 18 T18S R36E		



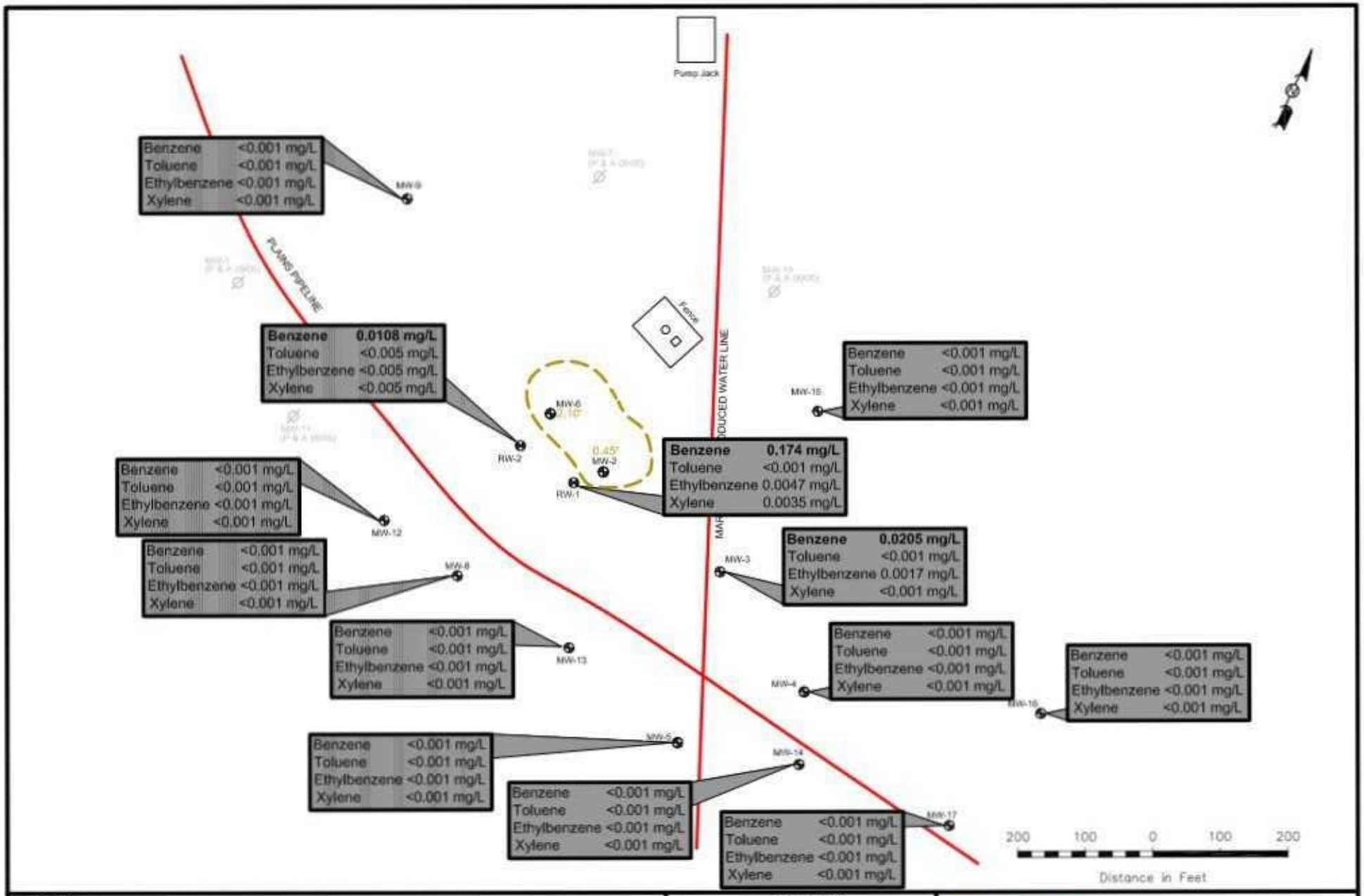
LEGEND:

- Monitor Well Location
- Inferred PSH Extent
- Pipeline
- (NS) Not Sampled
- 0.18' PSH Thickness (in feet)
- <0.001 Constituent Concentration (mg/L)
- (NA) PSH Thickness Data Unavailable

Figure 3C
Inferred PSH and
Dissolved Phase Extent
Map (8/4/2011)
NMOCD Reference # AP-009
Plains Marketing, L.P.
HDO 90-23
Lea County, NM

NOVA safety and environmental
2057 Commerce Drive
Midland, Texas 79703
432.520.7720
www.novasafetyandenvironmental.com

September 13, 2011	Scale: 1" = 200'	CAD By: TA	Checked By: RKR
Lat. N32° 44' 50.3" Long. W103° 23' 38.5"	NW1/4 SE1/4 Sec 18 T18S R36E		



LEGEND:

- Monitor Well Location
- Inferred PSH Extent
- Pipeline
- (NS) Not Sampled
- 0.18' PSH Thickness (in feet)
- <0.001 Constituent Concentration (mg/L)
- (NA) PSH Thickness Data Unavailable

Figure 3D
Inferred PSH and
Dissolved Phase Extent
Map (11/21/2011)
NMOCD Reference # AP-009
Plains Marketing, L.P.
HDO 90-23
Lea County, NM

NOVA safety and environmental
2057 Commerce Drive
Midland, Texas 79703
432.520.7720
www.novasafetyandenvironmental.com

December 5, 2011	Scale: 1" = 200'	CAD By: TA	Checked By: RKR
Lat. N32° 44' 50.3" Long. W103° 23' 38.5"	NW1/4 SE1/4 Sec 18 T18S R36E		

Tables

TABLE 1

GROUNDWATER ELEVATION DATA - 2011

PLAINS MARKETING, L.P.
HDO 90 - 23
LEA COUNTY, NEW MEXICO
NMOCD REFERENCE NUMBER AP-009

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW - 2	01/27/11	3,465.44	45.82	45.93	0.11	3,419.60
MW - 2	*02/15/11*	3,465.44	45.86	45.94	0.08	3,419.57
MW - 2	*05/05/11*	3,465.44	45.84	45.96	0.12	3,419.58
MW - 2	05/12/11	3,465.44	45.68	47.35	1.67	3,419.51
MW - 2	05/16/11	3,465.44	45.79	47.54	1.75	3,419.39
MW - 2	05/26/11	3,465.44	45.82	47.60	1.78	3,419.35
MW - 2	06/09/11	3,465.44	45.79	46.71	0.92	3,419.51
MW - 2	06/29/11	3,465.44	45.83	46.99	1.16	3,419.44
MW - 2	07/05/11	3,465.44	45.90	46.82	0.92	3,419.40
MW - 2	07/15/11	3,465.44	45.89	46.66	0.77	3,419.43
MW - 2	07/22/11	3,465.44	45.92	46.52	0.60	3,419.43
MW - 2	07/28/11	3,465.44	45.89	46.60	0.71	3,419.44
MW - 2	*08/04/11*	3,465.44	45.94	46.49	0.55	3,419.42
MW - 2	08/11/11	3,465.44	45.96	46.36	0.40	3,419.42
MW - 2	08/24/11	3,465.44	45.99	46.35	0.36	3,419.40
MW - 2	09/02/11	3,465.44	46.03	46.32	0.29	3,419.37
MW - 2	09/07/11	3,465.44	46.01	46.35	0.34	3,419.38
MW - 2	09/09/11	3,465.44	46.01	46.35	0.34	3,419.38
MW - 2	09/23/11	3,465.44	46.02	46.38	0.36	3,419.37
MW - 2	*11/21/11*	3,465.44	45.99	46.44	0.45	3,419.38
MW - 3	*02/15/11*	3,464.68	-	45.31	0.00	3,419.37
MW - 3	*05/05/11*	3,464.68	-	45.29	0.00	3,419.39
MW - 3	*08/04/11*	3,464.68	-	45.31	0.00	3,419.37
MW - 3	*11/21/11*	3,464.68	-	45.43	0.00	3,419.25
MW - 4	*02/15/11*	3,465.76	-	46.40	0.00	3,419.36
MW - 4	*05/05/11*	3,465.76	-	46.41	0.00	3,419.35
MW - 4	*08/04/11*	3,465.76	-	46.40	0.00	3,419.36
MW - 4	*11/21/11*	3,465.76	-	46.61	0.00	3,419.15
MW - 5	*02/15/11*	3,467.40	-	48.14	0.00	3,419.26
MW - 5	*05/05/11*	3,467.40	-	48.14	0.00	3,419.26
MW - 5	*08/04/11*	3,467.40	-	48.16	0.00	3,419.24
MW - 5	*11/21/11*	3,467.40	-	48.36	0.00	3,419.04
MW - 6	01/27/11	3,465.42	45.61	46.85	1.24	3,419.62
MW - 6	*02/15/11*	3,465.42	45.59	46.85	1.26	3,419.64
MW - 6	*05/05/11*	3,465.42	45.60	46.82	1.22	3,419.64
MW - 6	05/12/11	3,465.42	45.57	47.36	1.79	3,419.58
MW - 6	05/16/11	3,465.42	45.59	47.21	1.62	3,419.59
MW - 6	05/26/11	3,465.42	45.60	47.15	1.55	3,419.59
MW - 6	06/09/11	3,465.42	45.59	47.41	1.82	3,419.56
MW - 6	06/29/11	3,465.42	45.61	47.44	1.83	3,419.54
MW - 6	07/05/11	3,465.42	45.60	47.48	1.88	3,419.54
MW - 6	07/15/11	3,465.42	45.63	47.58	1.95	3,419.50
MW - 6	07/22/11	3,465.42	45.62	47.60	1.98	3,419.50

TABLE 1

GROUNDWATER ELEVATION DATA - 2011

PLAINS MARKETING, L.P.
HDO 90 - 23
LEA COUNTY, NEW MEXICO
NMOCD REFERENCE NUMBER AP-009

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW - 6	07/28/11	3,465.42	45.65	47.59	1.94	3,419.48
MW - 6	*08/04/11*	3,465.42	45.63	47.65	2.02	3,419.49
MW - 6	08/11/11	3,465.42	45.64	47.60	1.96	3,419.49
MW - 6	08/24/11	3,465.42	45.68	47.68	2.00	3,419.44
MW - 6	09/02/11	3,465.42	45.74	47.55	1.81	3,419.41
MW - 6	09/07/11	3,465.42	45.71	47.66	1.95	3,419.42
MW - 6	09/09/11	3,465.42	45.78	47.70	1.92	3,419.35
MW - 6	09/23/11	3,465.42	45.77	47.39	1.62	3,419.41
MW - 6	*11/21/11*	3,465.42	45.68	47.78	2.10	3,419.43
MW - 8	*02/15/11*	3,467.61	-	48.11	0.00	3,419.50
MW - 8	*05/05/11*	3,467.61	-	48.10	0.00	3,419.51
MW - 8	*08/04/11*	3,467.61	-	48.13	0.00	3,419.48
MW - 8	*11/21/11*	3,467.61	-	48.28	0.00	3,419.33
MW - 9	*02/15/11*	3,465.74	-	46.10	0.00	3,419.64
MW - 9	*05/05/11*	3,465.74	-	46.08	0.00	3,419.66
MW - 9	*08/04/11*	3,465.74	-	46.11	0.00	3,419.63
MW - 9	*11/21/11*	3,465.74	-	46.28	0.00	3,419.46
MW - 12	*02/15/11*	3466.69	-	47.20	0.00	3,419.49
MW - 12	*05/05/11*	3466.69	-	47.22	0.00	3,419.47
MW - 12	*08/04/11*	3466.69	-	47.22	0.00	3,419.47
MW - 12	*11/21/11*	3466.69	-	47.41	0.00	3,419.28
MW - 13	*02/15/11*	3466.98	-	47.76	0.00	3,419.22
MW - 13	*05/05/11*	3466.98	-	47.75	0.00	3,419.23
MW - 13	*08/04/11*	3466.98	-	47.75	0.00	3,419.23
MW - 13	*11/21/11*	3466.98	-	47.97	0.00	3,419.01
MW - 14	*02/15/11*	3466.50	-	47.48	0.00	3,419.02
MW - 14	*05/05/11*	3466.50	-	47.46	0.00	3,419.04
MW - 14	*08/04/11*	3466.50	-	47.47	0.00	3,419.03
MW - 14	*11/21/11*	3466.50	-	47.66	0.00	3,418.84
MW - 15	*02/15/11*	3466.10	-	46.81	0.00	3,419.29
MW - 15	*05/05/11*	3466.10	-	46.80	0.00	3,419.30
MW - 15	*08/04/11*	3466.10	-	46.83	0.00	3,419.27
MW - 15	*11/21/11*	3466.10	-	46.94	0.00	3,419.16
MW - 16	*02/15/11*	3465.93	-	46.83	0.00	3,419.10
MW - 16	*05/05/11*	3465.93	-	46.85	0.00	3,419.08
MW - 16	*08/04/11*	3465.93	-	46.87	0.00	3,419.06
MW - 16	*11/21/11*	3465.93	-	47.04	0.00	3,418.89

TABLE 1

GROUNDWATER ELEVATION DATA - 2011

PLAINS MARKETING, L.P.
HDO 90 - 23
LEA COUNTY, NEW MEXICO
NMOCD REFERENCE NUMBER AP-009

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW - 17	*02/15/11*	3468.68	-	49.73	0.00	3,418.95
MW - 17	*05/05/11*	3468.68	-	49.72	0.00	3,418.96
MW - 17	*08/04/11*	3468.68	-	49.72	0.00	3,418.96
MW - 17	*11/21/11*	3468.68	-	49.94	0.00	3,418.74
RW - 1	01/27/11	3465.02	-	45.70	0.00	3,419.32
RW - 1	*02/15/11*	3465.02	-	45.73	0.00	3,419.29
RW - 1	*05/05/11*	3465.02	-	45.72	0.00	3,419.30
RW - 1	05/12/11	3465.02	-	45.65	0.00	3,419.37
RW - 1	05/16/11	3465.02	-	45.67	0.00	3,419.35
RW - 1	05/26/11	3465.02	-	45.53	0.00	3,419.49
RW - 1	06/09/11	3465.02	-	45.62	0.00	3,419.40
RW - 1	06/29/11	3465.02	-	45.65	0.00	3,419.37
RW - 1	07/05/11	3465.02	-	45.66	0.00	3,419.36
RW - 1	07/15/11	3465.02	-	45.47	0.00	3,419.55
RW - 1	07/22/11	3465.02	-	45.50	0.00	3,419.52
RW - 1	07/28/11	3465.02	-	45.51	0.00	3,419.51
RW - 1	*08/04/11*	3465.02	-	45.74	0.00	3,419.28
RW - 1	08/11/11	3465.02	-	45.70	0.00	3,419.32
RW - 1	08/24/11	3465.02	-	45.75	0.00	3,419.27
RW - 1	09/02/11	3465.02	-	45.83	0.00	3,419.19
RW - 1	09/09/11	3465.02	-	46.01	0.00	3,419.01
RW - 1	09/23/11	3465.02	-	46.37	0.00	3,418.65
RW - 1	*11/21/11*	3465.02	-	45.90	0.00	3,419.12
RW - 2	01/27/11	3465.21	-	45.72	0.00	3419.49
RW - 2	*02/15/11*	3465.21	-	45.71	0.00	3419.50
RW - 2	*05/05/11*	3465.21	-	45.71	0.00	3419.50
RW - 2	05/12/11	3465.21	-	45.84	0.00	3419.37
RW - 2	05/16/11	3465.21	-	45.67	0.00	3419.54
RW - 2	05/26/11	3465.21	-	45.89	0.00	3419.32
RW - 2	06/09/11	3465.21	-	45.80	0.00	3419.41
RW - 2	06/29/11	3465.21	-	45.86	0.00	3419.35
RW - 2	07/05/11	3465.21	-	45.84	0.00	3419.37
RW - 2	07/15/11	3465.21	-	45.83	0.00	3419.38
RW - 2	07/22/11	3465.21	-	45.83	0.00	3419.38
RW - 2	07/28/11	3465.21	-	45.80	0.00	3419.41
RW - 2	*08/04/11*	3465.21	-	45.92	0.00	3419.29
RW - 2	08/11/11	3465.21	-	45.89	0.00	3419.32
RW - 2	08/24/11	3465.21	-	45.91	0.00	3419.30
RW - 2	09/02/11	3465.21	-	45.96	0.00	3419.25
RW - 2	09/09/11	3465.21	-	46.03	0.00	3419.18
RW - 2	09/23/11	3465.21	-	46.03	0.00	3419.18
RW - 2	*11/21/11*	3465.21	-	46.03	0.00	3419.18

** Complete Historical Tables are provided on the attached CD.*

TABLE 2

CONCENTRATIONS OF BTEX IN GROUNDWATER - 2011

PLAINS MARKETING, L.P.

HDO 90-23

LEA COUNTY, NEW MEXICO

NMOCD Reference Number AP-009

All concentrations are reported in mg/L

SAMPLE LOCATION	SAMPLE DATE	SW 846-8012B, 5030				
		BENZENE	TOLUENE	ETHYL-BENZENE	m, p - XYLENES	o - XYLENE
NMOCD REGULATORY LIMIT		0.0100	0.75	0.7500	0.620	
MW - 2	02/15/11	Not Sampled due to PSH in Well				
MW - 2	05/05/11	Not Sampled due to PSH in Well				
MW - 2	08/04/11	Not Sampled due to PSH in Well				
MW - 2	11/21/11	Not Sampled due to PSH in Well				
MW - 3	02/15/11	<0.001	<0.001	<0.001	<0.001	
MW - 3	05/05/11	**0.0110**	<0.001	<0.001	<0.001	
MW - 3	08/04/11	**0.0566**	<0.001	0.0081	<0.001	
MW - 3	11/21/11	**0.0205**	<0.001	0.0017	<0.001	
MW - 4	02/15/11	Not Sampled on Current Sample Schedule				
MW - 4	05/05/11	Not Sampled due to obstruction in well				
MW - 4	08/04/11	Not Sampled on Current Sample Schedule				
MW - 4	11/21/11	<0.001	<0.001	<0.001	<0.001	
MW - 5	02/15/11	Not Sampled on Current Sample Schedule				
MW - 5	05/05/11	<0.001	<0.001	<0.001	<0.001	
MW - 5	08/04/11	Not Sampled on Current Sample Schedule				
MW - 5	11/21/11	<0.001	<0.001	<0.001	<0.001	
MW - 6	02/15/11	Not Sampled due to PSH in Well				
MW - 6	05/05/11	Not Sampled due to PSH in Well				
MW - 6	08/04/11	Not Sampled due to PSH in Well				
MW - 6	11/21/11	Not Sampled due to PSH in Well				
MW - 8	02/15/11	Not Sampled on Current Sample Schedule				
MW - 8	05/05/11	Not Sampled on Current Sample Schedule				
MW - 8	08/04/11	Not Sampled on Current Sample Schedule				
MW - 8	11/21/11	<0.001	<0.001	<0.001	<0.001	
MW - 9	02/15/11	Not Sampled on Current Sample Schedule				
MW - 9	05/05/11	<0.001	<0.001	<0.001	<0.001	
MW - 9	08/04/11	Not Sampled on Current Sample Schedule				
MW - 9	11/21/11	<0.001	<0.001	<0.001	<0.001	
MW - 12	02/15/11	<0.001	<0.001	<0.001	<0.001	
MW - 12	05/05/11	<0.001	<0.001	<0.001	<0.001	
MW - 12	08/04/11	<0.001	<0.001	<0.001	<0.001	
MW - 12	11/21/11	<0.001	<0.001	<0.001	<0.001	

TABLE 2

CONCENTRATIONS OF BTEX IN GROUNDWATER - 2011

PLAINS MARKETING, L.P.

HDO 90-23

LEA COUNTY, NEW MEXICO

NMOCD Reference Number AP-009

All concentrations are reported in mg/L

SAMPLE LOCATION	SAMPLE DATE	SW 846-8012B, 5030				
		BENZENE	TOLUENE	ETHYL-BENZENE	m, p - XYLENES	o - XYLENE
NMOCD REGULATORY LIMIT		0.0100	0.75	0.7500	0.620	
MW - 13	02/15/11	<0.001	<0.001	<0.001	<0.001	
MW - 13	05/05/11	<0.001	<0.001	<0.001	<0.001	
MW - 13	08/04/11	<0.001	<0.001	<0.001	<0.001	
MW - 13	11/21/11	<0.001	<0.001	<0.001	<0.001	
MW - 14	02/15/11	<0.001	<0.001	<0.001	<0.001	
MW - 14	05/05/11	<0.001	<0.001	<0.001	<0.001	
MW - 14	08/04/11	<0.001	<0.001	<0.001	<0.001	
MW - 14	11/21/11	<0.001	<0.001	<0.001	<0.001	
MW - 15	02/15/11	<0.001	<0.001	<0.001	<0.001	
MW - 15	05/05/11	<0.001	<0.001	<0.001	<0.001	
MW - 15	08/04/11	<0.001	<0.001	<0.001	<0.001	
MW - 15	11/21/11	<0.001	<0.001	<0.001	<0.001	
MW - 16	02/15/11	Not Sampled on Current Sample Schedule				
MW - 16	05/05/11	Not Sampled on Current Sample Schedule				
MW - 16	08/04/11	Not Sampled on Current Sample Schedule				
MW - 16	11/21/11	<0.001	<0.001	<0.001	<0.001	
MW - 17	02/15/11	<0.001	<0.001	<0.001	<0.001	
MW - 17	05/05/11	<0.001	<0.001	<0.001	<0.001	
MW - 17	08/04/11	<0.001	<0.001	<0.001	<0.001	
MW - 17	11/21/11	<0.001	<0.001	<0.001	<0.001	
RW - 1	02/15/11	**0.434**	<0.010	<0.010	0.202	
RW - 1	05/05/11	**0.434**	<0.005	<0.005	<0.005	
RW - 1	08/04/11	**0.428**	<0.005	<0.005	<0.005	
RW - 1	11/21/11	**0.174**	<0.001	0.0047	0.0035	
RW - 2	02/15/11	**0.0225**	<0.001	<0.001	<0.001	
RW - 2	05/05/11	**0.0206**	<0.001	<0.001	<0.001	
RW - 2	08/04/11	**0.2330**	<0.001	0.0646	0.071	
RW - 2	11/21/11	**0.0108**	<0.005	<0.005	<0.005	

** Complete Historical Tables are provided on the attached CD.*

TABLE 3

POLYNUCLEAR AROMATIC HYDROCARBON CONCENTRATIONS IN GROUNDWATER

PLAINS MARKETING, L.P.
TNM HDO-90-23
LEA COUNTY, NEW MEXICO
NMOCD REFERENCE NUMBER AP-009

All water concentrations are reported in mg/L

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8270C, 3510																		
		Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Phenanthrene	Pyrene	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Dibenzofuran
Maximum Contaminant Levels from NM WQCC Drinking water standards Sections 1-101.UU and 3-103.A.		–	–	0.001 mg/L	0.0001 mg/L	0.0007 mg/L	0.001 mg/L	–	0.001 mg/L	0.0002 mg/L	0.0003 mg/L	0.001 mg/L	0.001 mg/L	0.0004 mg/L	0.001 mg/L	0.001 mg/L	0.03 mg/L			–
MW-2	11/06/08	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	**0.0227**	<0.000922	**0.0729**	**0.139**	**0.11**	0.0175
	11/16/09	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	**0.0112**	<0.000922	**0.0182**	<0.000922	**0.0480**	**0.123**	**0.0744**	0.0128
	11/09/10	Not Sampled due to the presence of PSH.																		
	12/16/11	Not Sampled due to the presence of PSH.																		
MW-3	11/06/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	**0.00202**	<0.000183	**0.00152**	<0.000183	<0.000183	0.0203	<0.000183	0.0032
	11/16/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	0.000825	<0.000183	<0.000183	<0.000183	<0.000183	0.00209
	11/09/10	Not Sampled as part of Quarterly Monitoring Event.																		
	12/16/11	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	0.001
MW-4	11/11/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
	11/16/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000185	<0.000183	<0.000183	<0.000183
	11/09/10	Not Sampled as part of Quarterly Monitoring Event.																		
	12/16/11	Not Sampled as part of Quarterly Monitoring Event.																		
MW-5	11/11/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	11/16/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
	11/09/10	Not Sampled as part of Quarterly Monitoring Event.																		
	12/16/11	Not Sampled as part of Quarterly Monitoring Event.																		
MW-6	11/06/08	<0.0188	<0.0188	<0.0188	<0.0188	<0.0188	<0.0188	<0.0188	<0.0188	<0.0188	<0.0188	<0.0188	**0.072**	<0.0188	**0.102**	<0.0188	**0.238**	**0.532**	**0.5**	0.0833
	11/16/09	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	<0.000917	0.0083	<0.000917	<0.000917	**0.0124**	<0.000917	**0.0599**	**0.118**	**0.0957**	0.0102
	11/09/10	Not Sampled due to the presence of PSH.																		
	12/16/11	Not Sampled due to the presence of PSH.																		
MW-8	11/06/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	11/16/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
	11/09/10	Not Sampled as part of Quarterly Monitoring Event.																		
	12/16/11	Not Sampled as part of Quarterly Monitoring Event.																		

TABLE 3

POLYNUCLEAR AROMATIC HYDROCARBON CONCENTRATIONS IN GROUNDWATER

PLAINS MARKETING, L.P.
TNM HDO-90-23
LEA COUNTY, NEW MEXICO
NMOCD REFERENCE NUMBER AP-009

All water concentrations are reported in mg/L

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8270C, 3510																		
		Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Phenanthrene	Pyrene	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Dibenzofuran
Maximum Contaminant Levels from NM WQCC Drinking water standards Sections 1-101.UU and 3-103.A.		–	–	0.001 mg/L	0.0001 mg/L	0.0007 mg/L	0.001 mg/L	–	0.001 mg/L	0.0002 mg/L	0.0003 mg/L	0.001 mg/L	0.001 mg/L	0.0004 mg/L	0.001 mg/L	0.001 mg/L	0.03 mg/L			–
MW-9	11/06/08	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185
	11/16/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
	11/09/10	Not Sampled as part of Quarterly Monitoring Event.																		
	12/16/11	Not Sampled as part of Quarterly Monitoring Event.																		
MW-12	11/06/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
	11/16/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
	11/09/10	Not Sampled as part of Quarterly Monitoring Event.																		
	12/16/11	Not Sampled as part of Quarterly Monitoring Event.																		
MW-13	11/06/08	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185
	11/16/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
	11/09/10	Not Sampled as part of Quarterly Monitoring Event.																		
	12/16/11	Not Sampled as part of Quarterly Monitoring Event.																		
MW-14	11/06/08	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	<0.000186	**0.000703**	<0.000186	<0.000186	0.000874	<0.000186	**0.00465**	<0.000186	0.00638	0.0141	0.00647	0.00458
	11/16/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
	11/09/10	Not Sampled as part of Quarterly Monitoring Event.																		
	12/16/11	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	0.00215
MW-15	11/06/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	0.000857	<0.000184	<0.000184	0.00194	0.000615	<0.000184
	11/16/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	0.000553	<0.000183	0.000870	<0.000183	<0.000183	<0.000183	<0.000183	0.00176
	11/09/10	Not Sampled as part of Quarterly Monitoring Event.																		
	12/16/11	Not Sampled as part of Quarterly Monitoring Event.																		
MW-16	11/06/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	11/16/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184
	11/09/10	Not Sampled as part of Quarterly Monitoring Event.																		
	12/16/11	Not Sampled as part of Quarterly Monitoring Event.																		

TABLE 3

POLYNUCLEAR AROMATIC HYDROCARBON CONCENTRATIONS IN GROUNDWATER

PLAINS MARKETING, L.P.
TNM HDO-90-23
LEA COUNTY, NEW MEXICO
NMOCD REFERENCE NUMBER AP-009

All water concentrations are reported in mg/L

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8270C, 3510																		
		Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Phenanthrene	Pyrene	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Dibenzofuran
Maximum Contaminant Levels from NM WQCC Drinking water standards Sections 1-101.UU and 3-103.A.		–	–	0.001 mg/L	0.0001 mg/L	0.0007 mg/L	0.001 mg/L	–	0.001 mg/L	0.0002 mg/L	0.0003 mg/L	0.001 mg/L	0.001 mg/L	0.0004 mg/L	0.001 mg/L	0.001 mg/L	0.03 mg/L			–
MW-17	11/06/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
	11/16/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
	11/09/10	Not Sampled as part of Quarterly Monitoring Event.																		
	12/16/11	Not Sampled as part of Quarterly Monitoring Event.																		
RW-1	11/06/08	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	0.00079	<0.000184	0.000549	<0.000184	**0.0187**	**0.0136**	**0.0106**	0.00117
	11/16/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	0.00607	0.00394	0.00125	0.000618
	11/09/10	Not Sampled as part of Quarterly Monitoring Event.																		
	12/16/11	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	0.000419	<0.000183	0.000265	<0.000183	0.000437	0.000184	<0.000183	0.000625
RW-2	11/06/08	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	<0.000185	0.000774	<0.000185	<0.000185
	11/16/09	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183
	11/09/10	Not Sampled as part of Quarterly Monitoring Event.																		
	12/16/11	Not Sampled as part of Quarterly Monitoring Event.																		

Appendices

Appendix A
Release Notification and Corrective Action
(Form C-141)

OIL CONSERVATION DIVISION

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR	TEXAS-NEW MEXICO PIPE LINE CO				ADDRESS	P. O. Box 2528, Hobbs, N.M. 88240	
REPORT OF	FIRE	BREAK	SPILL	LEAK X	BLOWOUT	OTHER*	
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTTY	PIPE LINE X	GASO PLNT	OIL RFY	OTHER*
NAME OF FACILITY	14" Trunk Line						
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION)	NW/4 NE/4				SEC. 6	TWP. 21	RGE. 37	COUNTY Lea
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK	6 Mi. NNW of Eunice & 3 Mi. N.W. of Loop 18							
DATE AND HOUR OF OCCURRENCE	Unknown				DATE AND HOUR OF DISCOVERY	3/27/90 2:15 P.M.		
WAS IMMEDIATE NOTICE GIVEN?	YES X	NO	NOT REQUIRED		IF YES, TO WHOM	NMOCC - B. Pritchard SCC - D. Trujillo		
BY WHOM	NMOCC - M. Criswell SCC - C. Johnson				DATE AND HOUR	3/27/90; NMOCC - 3:33 P.M. 3/28/90; SCC - 9:05 a.m.		
TYPE OF FLUID LOST	Sour Crude				QUANTITY OF LOSS	750 BBLS	VOLUME RECOVERED	550 BBLS
DID ANY FLUIDS REACH A WATERCOURSE?	YES	NO X	QUANTITY					

IF YES, DESCRIBE FULLY**

DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN**

External Corrosion

Line clamped off

DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN**

45,000 sq ft pasture land; 40,000 sq ft equipment damage.
Cattle in the area
Oil soaked earth covered with fresh soil in prospects of full restoration

DESCRIPTION OF AREA	FARMING	GRAZING X	URBAN	OTHER*			
SURFACE CONDITIONS	SANDY	SANDY LOAM X	CLAY	ROCKY	WET X	DRY	SNOW

DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**

55°

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

SIGNED B. L. Lednicky TITLE Dist. Manager DATE 3/28/90

*SPECIFY **ATTACH ADDITIONAL SHEETS IF NECESSARY

HDO 90-23

cc: Hazardous Waste Section
N.M. Environmental Improvement Div.

90-C63530

Laboratory Analytical Reports

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 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
8015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

E-mail Reports
Nova Safety & Environmental
2057 Commerce St.
Midland, TX, 79703

Report Date: February 23, 2011

Work Order: 11021610

Project Location: New Mexico
Project Name: HDO
Project Number: TNM-HDO-90-23

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
257516	MW-12	water	2011-02-15	11:00	2011-02-16
257517	MW-17	water	2011-02-15	11:45	2011-02-16
257518	MW-13	water	2011-02-15	12:30	2011-02-16
257519	MW-15	water	2011-02-15	13:15	2011-02-16
257520	MW-3	water	2011-02-15	14:00	2011-02-16
257521	MW-14	water	2011-02-15	14:45	2011-02-16
257522	RW-2	water	2011-02-15	15:30	2011-02-16
257523	RW-1	water	2011-02-15	16:15	2011-02-16

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.

This report consists of a total of 12 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael Abel

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

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Samples for project HDO were received by TraceAnalysis, Inc. on 2011-02-16 and assigned to work order 11021610. Samples for work order 11021610 were received intact without headspace and at a temperature of 1.2 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	66682	2011-02-16 at 15:35	77744	2011-02-16 at 15:35
BTEX	S 8021B	66740	2011-02-22 at 15:10	77815	2011-02-22 at 15:10

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 11021610 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: 257516 - MW-12

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	77744	Date Analyzed:	2011-02-16	Analyzed By:	ME
Prep Batch:	66682	Sample Preparation:	2011-02-16	Prepared By:	ME

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.107	mg/L	1	0.100	107	75.4 - 119.4
4-Bromofluorobenzene (4-BFB)		0.106	mg/L	1	0.100	106	78.6 - 122.8

Sample: 257517 - MW-17

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	77744	Date Analyzed:	2011-02-16	Analyzed By:	ME
Prep Batch:	66682	Sample Preparation:	2011-02-16	Prepared By:	ME

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.100	mg/L	1	0.100	100	75.4 - 119.4
4-Bromofluorobenzene (4-BFB)		0.0914	mg/L	1	0.100	91	78.6 - 122.8

Sample: 257518 - MW-13

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	77744	Date Analyzed:	2011-02-16	Analyzed By:	ME
Prep Batch:	66682	Sample Preparation:	2011-02-16	Prepared By:	ME

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0971	mg/L	1	0.100	97	75.4 - 119.4
4-Bromofluorobenzene (4-BFB)		0.0977	mg/L	1	0.100	98	78.6 - 122.8

Sample: 257519 - MW-15

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	77744	Date Analyzed:	2011-02-16	Analyzed By:	ME
Prep Batch:	66682	Sample Preparation:	2011-02-16	Prepared By:	ME

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0957	mg/L	1	0.100	96	75.4 - 119.4
4-Bromofluorobenzene (4-BFB)		0.0983	mg/L	1	0.100	98	78.6 - 122.8

Sample: 257520 - MW-3

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	77815	Date Analyzed:	2011-02-22	Analyzed By:	ME
Prep Batch:	66740	Sample Preparation:	2011-02-22	Prepared By:	ME

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.101	mg/L	1	0.100	101	75.4 - 119.4
4-Bromofluorobenzene (4-BFB)		0.122	mg/L	1	0.100	122	78.6 - 122.8

Sample: 257521 - MW-14

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	77815	Date Analyzed:	2011-02-22	Analyzed By:	ME
Prep Batch:	66740	Sample Preparation:	2011-02-22	Prepared By:	ME

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.104	mg/L	1	0.100	104	75.4 - 119.4
4-Bromofluorobenzene (4-BFB)		0.121	mg/L	1	0.100	121	78.6 - 122.8

Sample: 257522 - RW-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	77815	Date Analyzed:	2011-02-22	Analyzed By:	ME
Prep Batch:	66740	Sample Preparation:	2011-02-22	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		**0.0225**	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.103	mg/L	1	0.100	103	75.4 - 119.4
4-Bromofluorobenzene (4-BFB)		0.122	mg/L	1	0.100	122	78.6 - 122.8

Sample: 257523 - RW-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	77815	Date Analyzed:	2011-02-22	Analyzed By:	ME
Prep Batch:	66740	Sample Preparation:	2011-02-22	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		**0.434**	mg/L	10	0.00100
Toluene		<0.0100	mg/L	10	0.00100
Ethylbenzene		<0.0100	mg/L	10	0.00100
Xylene		**0.202**	mg/L	10	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.926	mg/L	10	1.00	93	75.4 - 119.4
4-Bromofluorobenzene (4-BFB)		1.12	mg/L	10	1.00	112	78.6 - 122.8

Method Blank (1) QC Batch: 77744

QC Batch:	77744	Date Analyzed:	2011-02-16	Analyzed By:	ME
Prep Batch:	66682	QC Preparation:	2011-02-16	Prepared By:	ME

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.000400	mg/L	0.001
Toluene		<0.000300	mg/L	0.001
Ethylbenzene		<0.000300	mg/L	0.001
Xylene		<0.000333	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0956	mg/L	1	0.100	96	70.8 - 117.4
4-Bromofluorobenzene (4-BFB)		0.103	mg/L	1	0.100	103	79 - 113.4

Method Blank (1) QC Batch: 77815

QC Batch:	77815	Date Analyzed:	2011-02-22	Analyzed By:	ME
Prep Batch:	66740	QC Preparation:	2011-02-22	Prepared By:	ME

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.000400	mg/L	0.001
Toluene		<0.000300	mg/L	0.001

continued ...

method blank continued ...

Parameter	Flag	MDL Result	Units	RL
Ethylbenzene		<0.000300	mg/L	0.001
Xylene		<0.000333	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0957	mg/L	1	0.100	96	70.8 - 117.4
4-Bromofluorobenzene (4-BFB)		0.113	mg/L	1	0.100	113	79 - 113.4

Laboratory Control Spike (LCS-1)

QC Batch: 77744 | Date Analyzed: 2011-02-16 | Analyzed By: ME
Prep Batch: 66682 | QC Preparation: 2011-02-16 | Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	0.105	mg/L	1	0.100	<0.000400	105	76.8 - 110.3
Toluene	0.104	mg/L	1	0.100	<0.000300	104	81 - 108.2
Ethylbenzene	0.104	mg/L	1	0.100	<0.000300	104	78.8 - 111
Xylene	0.310	mg/L	1	0.300	<0.000333	103	80.3 - 111.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	0.105	mg/L	1	0.100	<0.000400	105	76.8 - 110.3	0	20
Toluene	0.105	mg/L	1	0.100	<0.000300	105	81 - 108.2	1	20
Ethylbenzene	0.107	mg/L	1	0.100	<0.000300	107	78.8 - 111	3	20
Xylene	0.317	mg/L	1	0.300	<0.000333	106	80.3 - 111.4	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)	0.104	0.108	mg/L	1	0.100	104	108	66.6 - 114.5
4-Bromofluorobenzene (4-BFB)	0.113	0.110	mg/L	1	0.100	113	110	77.1 - 114.4

Laboratory Control Spike (LCS-1)

QC Batch: 77815 | Date Analyzed: 2011-02-22 | Analyzed By: ME
Prep Batch: 66740 | QC Preparation: 2011-02-22 | Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	0.0925	mg/L	1	0.100	<0.000400	92	76.8 - 110.3
Toluene	0.0947	mg/L	1	0.100	<0.000300	95	81 - 108.2
Ethylbenzene	0.0949	mg/L	1	0.100	<0.000300	95	78.8 - 111
Xylene	0.288	mg/L	1	0.300	<0.000333	96	80.3 - 111.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	0.0953	mg/L	1	0.100	<0.000400	95	76.8 - 110.3	3	20
Toluene	0.0974	mg/L	1	0.100	<0.000300	97	81 - 108.2	3	20
Ethylbenzene	0.0979	mg/L	1	0.100	<0.000300	98	78.8 - 111	3	20
Xylene	0.297	mg/L	1	0.300	<0.000333	99	80.3 - 111.4	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)	0.0960	0.0923	mg/L	1	0.100	96	92	66.6 - 114.5
4-Bromofluorobenzene (4-BFB)	0.113	0.113	mg/L	1	0.100	113	113	77.1 - 114.4

Matrix Spike (MS-1) Spiked Sample: 257309

QC Batch: 77744 | Date Analyzed: 2011-02-16 | Analyzed By: ME
Prep Batch: 66682 | QC Preparation: 2011-02-16 | Prepared By: ME

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	12.1	mg/L	50	5.00	7.7551	87	68.2 - 119.3
Toluene	4.44	mg/L	50	5.00	<0.0150	89	74.6 - 110.8
Ethylbenzene	5.57	mg/L	50	5.00	1.5023	81	71.6 - 111.9
Xylene	13.4	mg/L	50	15.0	1.2505	81	71.3 - 113.4

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	12.2	mg/L	50	5.00	7.7551	89	68.2 - 119.3	1	20
Toluene	4.60	mg/L	50	5.00	<0.0150	92	74.6 - 110.8	4	20
Ethylbenzene	5.81	mg/L	50	5.00	1.5023	86	71.6 - 111.9	4	20
Xylene	14.0	mg/L	50	15.0	1.2505	85	71.3 - 113.4	4	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)	4.62	4.53	mg/L	50	5	92	91	68.2 - 110.1

continued ...

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
4-Bromofluorobenzene (4-BFB)	5.06	5.05	mg/L	50	5	101	101	78.7 - 116.2

Matrix Spike (MS-1) Spiked Sample: 257764

QC Batch: 77815 | Date Analyzed: 2011-02-22 | Analyzed By: ME
Prep Batch: 66740 | QC Preparation: 2011-02-22 | Prepared By: ME

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	8.68	mg/L	100	10.0	0.6906	80	68.2 - 119.3
Toluene	8.73	mg/L	100	10.0	<0.0300	87	74.6 - 110.8
Ethylbenzene	8.81	mg/L	100	10.0	<0.0300	88	71.6 - 111.9
Xylene	26.5	mg/L	100	30.0	<0.0333	88	71.3 - 113.4

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	9.50	mg/L	100	10.0	0.6906	88	68.2 - 119.3	9	20
Toluene	9.65	mg/L	100	10.0	<0.0300	96	74.6 - 110.8	10	20
Ethylbenzene	9.82	mg/L	100	10.0	<0.0300	98	71.6 - 111.9	11	20
Xylene	29.5	mg/L	100	30.0	<0.0333	98	71.3 - 113.4	11	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)	9.27	9.19	mg/L	100	10	93	92	68.2 - 110.1
4-Bromofluorobenzene (4-BFB)	11.4	11.2	mg/L	100	10	114	112	78.7 - 116.2

Standard (CCV-1)

QC Batch: 77744 | Date Analyzed: 2011-02-16 | Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0976	98	80 - 120	2011-02-16
Toluene		mg/L	0.100	0.0973	97	80 - 120	2011-02-16
Ethylbenzene		mg/L	0.100	0.0967	97	80 - 120	2011-02-16
Xylene		mg/L	0.300	0.287	96	80 - 120	2011-02-16

Standard (CCV-2)

QC Batch: 77744 | Date Analyzed: 2011-02-16 | Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0910	91	80 - 120	2011-02-16
Toluene		mg/L	0.100	0.0912	91	80 - 120	2011-02-16
Ethylbenzene		mg/L	0.100	0.0900	90	80 - 120	2011-02-16
Xylene		mg/L	0.300	0.265	88	80 - 120	2011-02-16

Standard (CCV-3)

QC Batch: 77744 | Date Analyzed: 2011-02-16 | Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0950	95	80 - 120	2011-02-16
Toluene		mg/L	0.100	0.0954	95	80 - 120	2011-02-16
Ethylbenzene		mg/L	0.100	0.0920	92	80 - 120	2011-02-16
Xylene		mg/L	0.300	0.280	93	80 - 120	2011-02-16

Standard (CCV-1)

QC Batch: 77815 | Date Analyzed: 2011-02-22 | Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0943	94	80 - 120	2011-02-22
Toluene		mg/L	0.100	0.0953	95	80 - 120	2011-02-22
Ethylbenzene		mg/L	0.100	0.0963	96	80 - 120	2011-02-22
Xylene		mg/L	0.300	0.293	98	80 - 120	2011-02-22

Standard (CCV-2)

QC Batch: 77815 | Date Analyzed: 2011-02-22 | Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0908	91	80 - 120	2011-02-22
Toluene		mg/L	0.100	0.0920	92	80 - 120	2011-02-22
Ethylbenzene		mg/L	0.100	0.0911	91	80 - 120	2011-02-22

continued ...

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Xylene		mg/L	0.300	0.276	92	80 - 120	2011-02-22

Standard (CCV-3)

QC Batch: 77815 Date Analyzed: 2011-02-22 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0916	92	80 - 120	2011-02-22
Toluene		mg/L	0.100	0.0929	93	80 - 120	2011-02-22
Ethylbenzene		mg/L	0.100	0.0923	92	80 - 120	2011-02-22
Xylene		mg/L	0.300	0.281	94	80 - 120	2011-02-22

LAB Order ID # 1102160

Page 1 of 1

TraceAnalysis, Inc.

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Fax #: 432-520-7701
Contact Person: Ron R
E-mail:
Invoice to: (If different from above)
Project #: TNM-HDO-90-23
Project Name: HDO-90-23
Project Location (including state): New Mexico
Sampler Signature: B.F.

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, Fl, SO4, NO3, NO2, Alkalinity	Na, Ca, Mg, K, TDS, EC	Turn Around Time if different from standard	Hold
257516	mw-12	3	voa	X				X				X		2-15	11:00		X																				
517	mw-17														11:45																						
518	mw-13														12:30																						
519	mw-15														13:15																						
520	mw-3														14:00																						
521	mw-14														14:45																						
522	RW-2														15:30																						
523	RW-1	↓	↓	↓				↓				↓		↓	16:15		↓																					

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
B.F.	Nova	2-16	7am			2/16/10	0920	INST ___ °C
								OBS ___ °C
								COR ___ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
		2/16/10	0910		Trace	2/16/11	9:10	INST ___ °C
								OBS 1.2 °C
								COR ___ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
								INST ___ °C
								OBS ___ °C
								COR ___ °C

LAB USE ONLY

Intact (Y) N

Headspace Y (N) NA

Log-in-Review ___

REMARKS: All tests-Midland

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

Carrier # Courier

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

ORIGINAL COPY

TRACEANALYSIS, INC.

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Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Ron Rounsaville
Nova Safety & Environmental
2057 Commerce St.
Midland, TX, 79703

Report Date: May 11, 2011

Work Order: 11050617

Project Location: New Mexico
Project Name: HDO
Project Number: TNM-HDO-90-23

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
265803	MW-9	water	2011-05-05	12:00	2011-05-06
265804	MW-5	water	2011-05-05	13:00	2011-05-06
265805	MW-12	water	2011-05-05	13:30	2011-05-06
265806	MW-17	water	2011-05-05	14:00	2011-05-06
265807	MW-13	water	2011-05-05	14:30	2011-05-06
265808	MW-15	water	2011-05-05	15:00	2011-05-06
265809	MW-3	water	2011-05-05	15:30	2011-05-06
265810	MW-14	water	2011-05-05	16:00	2011-05-06
265811	RW-2	water	2011-05-05	17:00	2011-05-06
265812	RW-1	water	2011-05-05	17:45	2011-05-06

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.

Michael Abel

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

Report Contents

Case Narrative

Samples for project HDO were received by TraceAnalysis, Inc. on 2011-05-06 and assigned to work order 11050617. Samples for work order 11050617 were received intact without headspace and at a temperature of 10.8 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	68806	2011-05-09 at 10:48	81063	2011-05-09 at 10:48
BTEX	S 8021B	68807	2011-05-09 at 10:48	81064	2011-05-10 at 03:53

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 11050617 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: 265803 - MW-9

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	81063	Date Analyzed:	2011-05-09	Analyzed By:	ME
Prep Batch:	68806	Sample Preparation:	2011-05-09	Prepared By:	ME

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.106	mg/L	1	0.100	106	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.100	mg/L	1	0.100	100	51.1 - 128

Sample: 265804 - MW-5

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	81063	Date Analyzed:	2011-05-09	Analyzed By:	ME
Prep Batch:	68806	Sample Preparation:	2011-05-09	Prepared By:	ME

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.105	mg/L	1	0.100	105	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.0960	mg/L	1	0.100	96	51.1 - 128

Sample: 265805 - MW-12

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	81063	Date Analyzed:	2011-05-09	Analyzed By:	ME
Prep Batch:	68806	Sample Preparation:	2011-05-09	Prepared By:	ME

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0991	mg/L	1	0.100	99	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.0954	mg/L	1	0.100	95	51.1 - 128

Sample: 265806 - MW-17

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	81063	Date Analyzed:	2011-05-09	Analyzed By:	ME
Prep Batch:	68806	Sample Preparation:	2011-05-09	Prepared By:	ME

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		:	<0.00100	mg/L	1	0.00100
Toluene		:	<0.00100	mg/L	1	0.00100
Ethylbenzene		:	<0.00100	mg/L	1	0.00100
Xylene		:	<0.00100	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	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.0929	mg/L	1	0.100	93	51.1 - 128

Sample: 265807 - MW-13

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	81063	Date Analyzed:	2011-05-09	Analyzed By:	ME
Prep Batch:	68806	Sample Preparation:	2011-05-09	Prepared By:	ME

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0979	mg/L	1	0.100	98	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.0897	mg/L	1	0.100	90	51.1 - 128

Sample: 265808 - MW-15

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	81063	Date Analyzed:	2011-05-09	Analyzed By:	ME
Prep Batch:	68806	Sample Preparation:	2011-05-09	Prepared By:	ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		:	<0.00100	mg/L	1	0.00100
Toluene		:	<0.00100	mg/L	1	0.00100
Ethylbenzene		:	<0.00100	mg/L	1	0.00100
Xylene		:	<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	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.102	mg/L	1	0.100	102	51.1 - 128

Sample: 265809 - MW-3

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	81063	Date Analyzed:	2011-05-09	Analyzed By:	ME
Prep Batch:	68806	Sample Preparation:	2011-05-09	Prepared By:	ME

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		:	**0.0110**	mg/L	1	0.00100
Toluene		:	<0.00100	mg/L	1	0.00100
Ethylbenzene		:	<0.00100	mg/L	1	0.00100
Xylene		:	<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	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.0961	mg/L	1	0.100	96	51.1 - 128

Sample: 265810 - MW-14

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	81063	Date Analyzed:	2011-05-09	Analyzed By:	ME
Prep Batch:	68806	Sample Preparation:	2011-05-09	Prepared By:	ME

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		:	<0.00100	mg/L	1	0.00100
Toluene		:	<0.00100	mg/L	1	0.00100
Ethylbenzene		:	<0.00100	mg/L	1	0.00100
Xylene		:	<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	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.0998	mg/L	1	0.100	100	51.1 - 128

Sample: 265811 - RW-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	81063	Date Analyzed:	2011-05-09	Analyzed By:	ME
Prep Batch:	68806	Sample Preparation:	2011-05-09	Prepared By:	ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		:	**0.0206**	mg/L	1	0.00100
Toluene		:	<0.00100	mg/L	1	0.00100
Ethylbenzene		:	<0.00100	mg/L	1	0.00100
Xylene		:	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.100	mg/L	1	0.100	100	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.0928	mg/L	1	0.100	93	51.1 - 128

Sample: 265812 - RW-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	81064	Date Analyzed:	2011-05-10	Analyzed By:	ME
Prep Batch:	68807	Sample Preparation:	2011-05-09	Prepared By:	ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		:	**0.434**	mg/L	5	0.00100
Toluene		:	<0.00500	mg/L	5	0.00100
Ethylbenzene		:	<0.00500	mg/L	5	0.00100
Xylene		:	<0.00500	mg/L	5	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.391	mg/L	5	0.500	78	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.359	mg/L	5	0.500	72	51.1 - 128

Method Blanks

Method Blank (1) QC Batch: 81063

QC Batch: 81063 | Date Analyzed: 2011-05-09 | Analyzed By: ME
Prep Batch: 68806 | QC Preparation: 2011-05-09 | Prepared By: ME

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		:	<0.000400	mg/L	0.001
Toluene		:	<0.000300	mg/L	0.001
Ethylbenzene		:	<0.000300	mg/L	0.001
Xylene		:	<0.000333	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.103	mg/L	1	0.100	103	70.2 - 118
4-Bromofluorobenzene (4-BFB)			0.0963	mg/L	1	0.100	96	47.3 - 116

Method Blank (1) QC Batch: 81064

QC Batch: 81064 | Date Analyzed: 2011-05-10 | Analyzed By: ME
Prep Batch: 68807 | QC Preparation: 2011-05-09 | Prepared By: ME

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		:	<0.000400	mg/L	0.001
Toluene		:	<0.000300	mg/L	0.001
Ethylbenzene		:	<0.000300	mg/L	0.001
Xylene		:	<0.000333	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0777	mg/L	1	0.100	78	70.2 - 118
4-Bromofluorobenzene (4-BFB)			0.0740	mg/L	1	0.100	74	47.3 - 116

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 81063 | Date Analyzed: 2011-05-09 | Analyzed By: ME
Prep Batch: 68806 | QC Preparation: 2011-05-09 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		:	0.104	mg/L	1	0.100	<0.000400	104	76.8 - 110
Toluene		:	0.106	mg/L	1	0.100	<0.000300	106	81 - 108
Ethylbenzene		:	0.0966	mg/L	1	0.100	<0.000300	97	78.8 - 118
Xylene		:	0.288	mg/L	1	0.300	<0.000333	96	80.3 - 119

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		:	0.110	mg/L	1	0.100	<0.000400	110	76.8 - 110	6	20
Toluene		:	0.107	mg/L	1	0.100	<0.000300	107	81 - 108	1	20
Ethylbenzene		:	0.101	mg/L	1	0.100	<0.000300	101	78.8 - 118	4	20
Xylene		:	0.308	mg/L	1	0.300	<0.000333	103	80.3 - 119	7	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)	0.106	0.111	mg/L	1	0.100	106	111	66.6 - 114
4-Bromofluorobenzene (4-BFB)	0.110	0.112	mg/L	1	0.100	110	112	68.2 - 124

Laboratory Control Spike (LCS-1)

QC Batch: 81064 | Date Analyzed: 2011-05-10 | Analyzed By: ME
Prep Batch: 68807 | QC Preparation: 2011-05-09 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		:	0.0989	mg/L	1	0.100	<0.000400	99	76.8 - 110
Toluene		:	0.104	mg/L	1	0.100	<0.000300	104	81 - 108
Ethylbenzene		:	0.0899	mg/L	1	0.100	<0.000300	90	78.8 - 118
Xylene		:	0.268	mg/L	1	0.300	<0.000333	89	80.3 - 119

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	0.100	mg/L	1	0.100	<0.000400	100	76.8 - 110	1	20
Toluene		1	0.106	mg/L	1	0.100	<0.000300	106	81 - 108	2	20
Ethylbenzene		1	0.0910	mg/L	1	0.100	<0.000300	91	78.8 - 118	1	20
Xylene		1	0.272	mg/L	1	0.300	<0.000333	91	80.3 - 119	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)	0.0940	0.0907	mg/L	1	0.100	94	91	66.6 - 114
4-Bromofluorobenzene (4-BFB)	0.0987	0.0971	mg/L	1	0.100	99	97	68.2 - 124

Matrix Spike (MS-1) Spiked Sample: 265739

QC Batch: 81063 | Date Analyzed: 2011-05-09 | Analyzed By: ME
Prep Batch: 68806 | QC Preparation: 2011-05-09 | Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	5.39	mg/L	50	5.00	0.8613	90	77.9 - 114
Toluene		1	5.23	mg/L	50	5.00	<0.0150	105	78.3 - 111
Ethylbenzene		1	4.51	mg/L	50	5.00	<0.0150	90	75.3 - 110
Xylene		1	13.4	mg/L	50	15.0	<0.0166	89	75.7 - 109

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	5.57	mg/L	50	5.00	0.8613	94	77.9 - 114	3	20
Toluene		1	5.41	mg/L	50	5.00	<0.0150	108	78.3 - 111	3	20
Ethylbenzene		1	4.70	mg/L	50	5.00	<0.0150	94	75.3 - 110	4	20
Xylene		1	14.0	mg/L	50	15.0	<0.0166	93	75.7 - 109	4	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)	5.30	5.27	mg/L	50	5	106	105	68.3 - 107
4-Bromofluorobenzene (4-BFB)	5.26	5.21	mg/L	50	5	105	104	60.1 - 135

Matrix Spike (MS-1) Spiked Sample: 265847

QC Batch: 81064 | Date Analyzed: 2011-05-10 | Analyzed By: ME
Prep Batch: 68807 | QC Preparation: 2011-05-09 | Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		:	2.62	mg/L	20	2.00	0.7463	94	77.9 - 114
Toluene		:	2.12	mg/L	20	2.00	<0.00600	106	78.3 - 111
Ethylbenzene		:	1.89	mg/L	20	2.00	<0.00600	94	75.3 - 110
Xylene		:	5.55	mg/L	20	6.00	0.3761	86	75.7 - 109

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		:	2.66	mg/L	20	2.00	0.7463	96	77.9 - 114	2	20
Toluene		:	2.21	mg/L	20	2.00	<0.00600	110	78.3 - 111	4	20
Ethylbenzene		:	1.97	mg/L	20	2.00	<0.00600	98	75.3 - 110	4	20
Xylene		:	5.81	mg/L	20	6.00	0.3761	90	75.7 - 109	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)	1.34	1.64	mg/L	20	2	67	82	68.3 - 107
4-Bromofluorobenzene (4-BFB)	1.66	1.68	mg/L	20	2	83	84	60.1 - 135

Calibration Standards

Standard (CCV-1)

QC Batch: 81063 | Date Analyzed: 2011-05-09 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0993	99	80 - 120	2011-05-09
Toluene		1	mg/L	0.100	0.108	108	80 - 120	2011-05-09
Ethylbenzene		1	mg/L	0.100	0.0957	96	80 - 120	2011-05-09
Xylene		1	mg/L	0.300	0.288	96	80 - 120	2011-05-09

Standard (CCV-2)

QC Batch: 81063 | Date Analyzed: 2011-05-09 | Analyzed By: ME

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	2011-05-09
Toluene		1	mg/L	0.100	0.107	107	80 - 120	2011-05-09
Ethylbenzene		1	mg/L	0.100	0.0930	93	80 - 120	2011-05-09
Xylene		1	mg/L	0.300	0.277	92	80 - 120	2011-05-09

Standard (CCV-3)

QC Batch: 81063 | Date Analyzed: 2011-05-09 | Analyzed By: ME

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	2011-05-09
Toluene		1	mg/L	0.100	0.110	110	80 - 120	2011-05-09
Ethylbenzene		1	mg/L	0.100	0.0952	95	80 - 120	2011-05-09
Xylene		1	mg/L	0.300	0.285	95	80 - 120	2011-05-09

Standard (CCV-1)

QC Batch: 81064 | Date Analyzed: 2011-05-10 | Analyzed By: ME

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	2011-05-10
Toluene		1	mg/L	0.100	0.110	110	80 - 120	2011-05-10
Ethylbenzene		1	mg/L	0.100	0.0954	95	80 - 120	2011-05-10
Xylene		1	mg/L	0.300	0.284	95	80 - 120	2011-05-10

Standard (CCV-2)

QC Batch: 81064 | Date Analyzed: 2011-05-10 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.102	102	80 - 120	2011-05-10
Toluene		1	mg/L	0.100	0.108	108	80 - 120	2011-05-10
Ethylbenzene		1	mg/L	0.100	0.0935	94	80 - 120	2011-05-10
Xylene		1	mg/L	0.300	0.278	93	80 - 120	2011-05-10

Appendix

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	T104704392-10-TX	Midland

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.
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 # 1105061 7

Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

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Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
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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: LWA — **Phone #:** 432-520-7720

Address: (Street, City, Zip) 2057 Commerce Midland TX 79703 — **Fax #:** 432-520-7701

Contact Person: Ron R. — **E-mail:**

Invoice to: (If different from above)

Project #: TWH-HDO-90-23 — **Project Name:** HDO

Project Location (including state): New Mexico — **Sampler Signature:** R.R.

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, Fl, SO4, NO3, NO2, Alkalinity	Na, Ca, Mg, K, TDS, EC					Turn Around Time if different from standard	Hold
265803	MW-9	3	voa	X				X				X		5-5-11	12:00		X																						
804	MW-5														13:00																									
805	MW-12														13:30																									
806	MW-17														14:00																									
807	MW-13														14:30																									
808	MW-15														15:00																									
809	MW-3														15:30																									
810	MW-14														16:00																									
811	RW-2														17:00																									
812	RW-1	↓	↓	↓				↓				↓		↓	17:45		↓																								

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
R.R.	LWA	5-6-11	10:13		T/A	5/6/11	10:13	INST OBS 10.8 °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 OBS °C COR °C

LAB USE ONLY

Intact (Y) N

Headspace Y (N) NA

Log-In-Review

REMARKS:

* All tests Midland

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

Carrier # Carry

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

ORIGINAL COPY

TRACEANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Ron Rounsaville
Nova Safety & Environmental
2057 Commerce St.
Midland, TX, 79703

Report Date: August 17, 2011

Work Order: 11080804

Project Location: New Mexico
Project Name: HDO
Project Number: TNM-HDO-90-23

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
274008	MW-12	water	2011-08-04	10:45	2011-08-05
274009	MW-17	water	2011-08-04	11:30	2011-08-05
274010	MW-13	water	2011-08-04	12:15	2011-08-05
274011	MW-15	water	2011-08-04	13:00	2011-08-05
274012	MW-14	water	2011-08-04	13:45	2011-08-05
274013	MW-3	water	2011-08-04	14:30	2011-08-05
274014	RW-2	water	2011-08-04	15:35	2011-08-05
274015	RW-1	water	2011-08-04	16:30	2011-08-05

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.

Michael Abel

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

Report Contents

Case Narrative

Samples for project HDO were received by TraceAnalysis, Inc. on 2011-08-05 and assigned to work order 11080804. Samples for work order 11080804 were received intact without headspace and at a temperature of 2.1 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	71159	2011-08-10 at 09:08	83787	2011-08-10 at 09:08
BTEX	S 8021B	71215	2011-08-16 at 09:24	83858	2011-08-16 at 09:24

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 11080804 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: 274008 - MW-12

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	83787	Date Analyzed:	2011-08-10	Analyzed By:	ME
Prep Batch:	71159	Sample Preparation:	2011-08-10	Prepared By:	ME

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.105	mg/L	1	0.100	105	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0971	mg/L	1	0.100	97	67.5 - 140.8

Sample: 274009 - MW-17

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	83787	Date Analyzed:	2011-08-10	Analyzed By:	ME
Prep Batch:	71159	Sample Preparation:	2011-08-10	Prepared By:	ME

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.109	mg/L	1	0.100	109	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.101	mg/L	1	0.100	101	67.5 - 140.8

Sample: 274010 - MW-13

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	83787	Date Analyzed:	2011-08-10	Analyzed By:	ME
Prep Batch:	71159	Sample Preparation:	2011-08-10	Prepared By:	ME

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)			0.119	mg/L	1	0.100	119	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.109	mg/L	1	0.100	109	67.5 - 140.8

Sample: 274011 - MW-15

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	83787	Date Analyzed:	2011-08-10	Analyzed By:	ME
Prep Batch:	71159	Sample Preparation:	2011-08-10	Prepared By:	ME

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)			0.111	mg/L	1	0.100	111	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.104	mg/L	1	0.100	104	67.5 - 140.8

Sample: 274012 - MW-14

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	83787	Date Analyzed:	2011-08-10	Analyzed By:	ME
Prep Batch:	71159	Sample Preparation:	2011-08-10	Prepared By:	ME

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)			0.114	mg/L	1	0.100	114	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.110	mg/L	1	0.100	110	67.5 - 140.8

Sample: 274013 - MW-3

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	83787	Date Analyzed:	2011-08-10	Analyzed By:	ME
Prep Batch:	71159	Sample Preparation:	2011-08-10	Prepared By:	ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.0566**	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	**0.00810**	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)			0.106	mg/L	1	0.100	106	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.109	mg/L	1	0.100	109	67.5 - 140.8

Sample: 274014 - RW-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	83787	Date Analyzed:	2011-08-10	Analyzed By:	ME
Prep Batch:	71159	Sample Preparation:	2011-08-10	Prepared By:	ME

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		:	**0.233**	mg/L	1	0.00100
Toluene	U	:	<0.00100	mg/L	1	0.00100
Ethylbenzene		:	**0.0646**	mg/L	1	0.00100
Xylene		:	**0.0710**	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.117	mg/L	1	0.100	117	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.117	mg/L	1	0.100	117	67.5 - 140.8

Sample: 274015 - RW-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	83858	Date Analyzed:	2011-08-16	Analyzed By:	ME
Prep Batch:	71215	Sample Preparation:	2011-08-16	Prepared By:	ME

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		:	**0.428**	mg/L	5	0.00100
Toluene	U	:	<0.00500	mg/L	5	0.00100
Ethylbenzene	U	:	<0.00500	mg/L	5	0.00100
Xylene	U	:	<0.00500	mg/L	5	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.483	mg/L	5	0.500	97	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.477	mg/L	5	0.500	95	67.5 - 140.8

Method Blanks

Method Blank (1) QC Batch: 83787

QC Batch: 83787 | Date Analyzed: 2011-08-10 | Analyzed By: ME
Prep Batch: 71159 | QC Preparation: 2011-08-10 | Prepared By: ME

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		:	<0.000400	mg/L	0.001
Toluene		:	<0.000300	mg/L	0.001
Ethylbenzene		:	<0.000300	mg/L	0.001
Xylene		:	<0.000333	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	61.1 - 118.4
4-Bromofluorobenzene (4-BFB)			0.0966	mg/L	1	0.100	97	45.9 - 126.4

Method Blank (1) QC Batch: 83858

QC Batch: 83858 | Date Analyzed: 2011-08-16 | Analyzed By: ME
Prep Batch: 71215 | QC Preparation: 2011-08-16 | Prepared By: ME

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		:	<0.000400	mg/L	0.001
Toluene		:	<0.000300	mg/L	0.001
Ethylbenzene		:	<0.000300	mg/L	0.001
Xylene		:	<0.000333	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0931	mg/L	1	0.100	93	61.1 - 118.4
4-Bromofluorobenzene (4-BFB)			0.0869	mg/L	1	0.100	87	45.9 - 126.4

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 83787 | Date Analyzed: 2011-08-10 | Analyzed By: ME
Prep Batch: 71159 | QC Preparation: 2011-08-10 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		:	0.0901	mg/L	1	0.100	<0.000400	90	88 - 116.8
Toluene		:	0.100	mg/L	1	0.100	<0.000300	100	90.9 - 122.2
Ethylbenzene		:	0.0983	mg/L	1	0.100	<0.000300	98	72.7 - 120.2
Xylene		:	0.294	mg/L	1	0.300	<0.000333	98	72.1 - 121.5

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		:	0.0939	mg/L	1	0.100	<0.000400	94	88 - 116.8	4	20
Toluene		:	0.104	mg/L	1	0.100	<0.000300	104	90.9 - 122.2	4	20
Ethylbenzene		:	0.103	mg/L	1	0.100	<0.000300	103	72.7 - 120.2	5	20
Xylene		:	0.309	mg/L	1	0.300	<0.000333	103	72.1 - 121.5	5	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)	0.106	0.112	mg/L	1	0.100	106	112	61.9 - 119.2
4-Bromofluorobenzene (4-BFB)	0.103	0.110	mg/L	1	0.100	103	110	56.4 - 127.9

Laboratory Control Spike (LCS-1)

QC Batch: 83858 | Date Analyzed: 2011-08-16 | Analyzed By: ME
Prep Batch: 71215 | QC Preparation: 2011-08-16 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		:	0.0984	mg/L	1	0.100	<0.000400	98	88 - 116.8
Toluene		:	0.103	mg/L	1	0.100	<0.000300	103	90.9 - 122.2
Ethylbenzene		:	0.105	mg/L	1	0.100	<0.000300	105	72.7 - 120.2
Xylene		:	0.317	mg/L	1	0.300	<0.000333	106	72.1 - 121.5

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		:	0.0979	mg/L	1	0.100	<0.000400	98	88 - 116.8	0	20
Toluene		:	0.103	mg/L	1	0.100	<0.000300	103	90.9 - 122.2	0	20
Ethylbenzene		:	0.105	mg/L	1	0.100	<0.000300	105	72.7 - 120.2	0	20
Xylene		:	0.317	mg/L	1	0.300	<0.000333	106	72.1 - 121.5	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)	0.0996	0.0987	mg/L	1	0.100	100	99	61.9 - 119.2
4-Bromofluorobenzene (4-BFB)	0.0998	0.0988	mg/L	1	0.100	100	99	56.4 - 127.9

Matrix Spike (MS-1) Spiked Sample: 274004

QC Batch: 83787 | Date Analyzed: 2011-08-10 | Analyzed By: ME
Prep Batch: 71159 | QC Preparation: 2011-08-10 | Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		:	13.8	mg/L	50	5.00	9.4222	88	66.9 - 128.2
Toluene		:	4.84	mg/L	50	5.00	<0.0150	97	81.6 - 122.9
Ethylbenzene		:	6.05	mg/L	50	5.00	1.4675	92	62.7 - 117.9
Xylene		:	14.3	mg/L	50	15.0	0.9728	89	62.9 - 118.2

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		:	13.8	mg/L	50	5.00	9.4222	88	66.9 - 128.2	0	20
Toluene		:	4.96	mg/L	50	5.00	<0.0150	99	81.6 - 122.9	2	20
Ethylbenzene		:	6.17	mg/L	50	5.00	1.4675	94	62.7 - 117.9	2	20
Xylene		:	14.8	mg/L	50	15.0	0.9728	92	62.9 - 118.2	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)	5.24	5.23	mg/L	50	5	105	105	58.6 - 119.7
4-Bromofluorobenzene (4-BFB)	5.36	5.35	mg/L	50	5	107	107	52.2 - 135.8

Calibration Standards

Standard (CCV-1)

QC Batch: 83787 | Date Analyzed: 2011-08-10 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0923	92	80 - 120	2011-08-10
Toluene		1	mg/L	0.100	0.103	103	80 - 120	2011-08-10
Ethylbenzene		1	mg/L	0.100	0.0996	100	80 - 120	2011-08-10
Xylene		1	mg/L	0.300	0.303	101	80 - 120	2011-08-10

Standard (CCV-2)

QC Batch: 83787 | Date Analyzed: 2011-08-10 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0967	97	80 - 120	2011-08-10
Toluene		1	mg/L	0.100	0.106	106	80 - 120	2011-08-10
Ethylbenzene		1	mg/L	0.100	0.105	105	80 - 120	2011-08-10
Xylene		1	mg/L	0.300	0.313	104	80 - 120	2011-08-10

Standard (CCV-2)

QC Batch: 83858 | Date Analyzed: 2011-08-16 | Analyzed By: ME

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	2011-08-16
Toluene		1	mg/L	0.100	0.105	105	80 - 120	2011-08-16
Ethylbenzene		1	mg/L	0.100	0.107	107	80 - 120	2011-08-16
Xylene		1	mg/L	0.300	0.321	107	80 - 120	2011-08-16

Standard (CCV-3)

QC Batch: 83858 | Date Analyzed: 2011-08-16 | Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0941	94	80 - 120	2011-08-16
Toluene		1	mg/L	0.100	0.0984	98	80 - 120	2011-08-16
Ethylbenzene		1	mg/L	0.100	0.100	100	80 - 120	2011-08-16
Xylene		1	mg/L	0.300	0.301	100	80 - 120	2011-08-16

Appendix

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	T104704392-10-TX	Midland

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.
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 # 1108004

Page 1 of 1

TraceAnalysis, Inc.

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Company Name: YOUCA
Address: (Street, City, Zip) 2057 Commerce Midland TX 79703
Contact Person: Ron R.
Invoice to: (If different from above)
Project #: TNW-HDO-90-23
Project Location (including state): New Mexico
Phone #: 432-520-7720
Fax #: 432-520-7701
E-mail:
Project Name: HDO
Sampler Signature: [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 (8021 circled)
274008	MW-12	3	VOA	X				X				X		8-4	10:45		X
009	MW-17														11:30		
010	MW-13														12:15		
011	MW-15														13:00		
012	MW-14														13:45		
013	MW-3														14:30		
014	RW-2														15:35		
015	RW-1														16:30		

Other analysis columns (none marked): 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, Fl, SO4, NO3, NO2, Alkalinity; Na, Ca, Mg, K, TDS, EC; Turn Around Time if different from standard; Hold

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
[signature]	YOUCA	8-5	4:20	[signature]	T/A	8/5/11	16:20	INST ___ OBS 2.1 °C COR ___ °C
								INST ___ OBS ___ °C COR ___ °C
								INST ___ OBS ___ °C COR ___ °C

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

REMARKS: All tests - Midland

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

Carrier #

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

ORIGINAL COPY

TRACEANALYSIS, INC.

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8015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Ron Rounsaville
Nova Safety & Environmental
2057 Commerce St.
Midland, TX, 79703

Report Date: November 29, 2011

Work Order: 11112306

Project Location: New Mexico
Project Name: HDO
Project Number: TNM-HDO-90-23

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
283012	MW-8	water	2011-11-21	12:50	2011-11-23
283013	MW-16	water	2011-11-21	13:10	2011-11-23
283014	MW-9	water	2011-11-21	13:25	2011-11-23
283015	MW-4	water	2011-11-21	13:35	2011-11-23
283016	MW-5	water	2011-11-21	13:50	2011-11-23
283017	MW-12	water	2011-11-21	14:05	2011-11-23
283018	MW-17	water	2011-11-21	14:20	2011-11-23
283019	MW-13	water	2011-11-21	14:30	2011-11-23
283020	MW-15	water	2011-11-21	14:45	2011-11-23
283021	MW-14	water	2011-11-21	15:00	2011-11-23
283022	MW-3	water	2011-11-21	15:25	2011-11-23
283023	RW-1	water	2011-11-21	16:00	2011-11-23
283024	RW-2	water	2011-11-21	16:35	2011-11-23

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 HDO were received by TraceAnalysis, Inc. on 2011-11-23 and assigned to work order 11112306. Samples for work order 11112306 were received intact without headspace and at a temperature of 9.9 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	73644	2011-11-23 at 11:15	86735	2011-11-23 at 13:10
BTEX	S 8021B	73644	2011-11-23 at 11:15	86736	2011-11-24 at 03:24

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 11112306 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.

Samples on ice.

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: 283012 - MW-8

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86735	Date Analyzed:	2011-11-23	Analyzed By:	AG
Prep Batch:	73644	Sample Preparation:	2011-11-23	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.100	mg/L	1	0.100	100	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0825	mg/L	1	0.100	82	67.5 - 140.8

Sample: 283013 - MW-16

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86735	Date Analyzed:	2011-11-23	Analyzed By:	AG
Prep Batch:	73644	Sample Preparation:	2011-11-23	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0981	mg/L	1	0.100	98	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0809	mg/L	1	0.100	81	67.5 - 140.8

Sample: 283014 - MW-9

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86735	Date Analyzed:	2011-11-23	Analyzed By:	AG
Prep Batch:	73644	Sample Preparation:	2011-11-23	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0968	mg/L	1	0.100	97	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0798	mg/L	1	0.100	80	67.5 - 140.8

Sample: 283015 - MW-4

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86735	Date Analyzed:	2011-11-23	Analyzed By:	AG
Prep Batch:	73644	Sample Preparation:	2011-11-23	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0971	mg/L	1	0.100	97	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0789	mg/L	1	0.100	79	67.5 - 140.8

Sample: 283016 - MW-5

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86735	Date Analyzed:	2011-11-23	Analyzed By:	AG
Prep Batch:	73644	Sample Preparation:	2011-11-23	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0973	mg/L	1	0.100	97	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0792	mg/L	1	0.100	79	67.5 - 140.8

Sample: 283017 - MW-12

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86736	Date Analyzed:	2011-11-24	Analyzed By:	AG
Prep Batch:	73644	Sample Preparation:	2011-11-23	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0897	mg/L	1	0.100	90	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0758	mg/L	1	0.100	76	67.5 - 140.8

Sample: 283018 - MW-17

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86736	Date Analyzed:	2011-11-24	Analyzed By:	AG
Prep Batch:	73644	Sample Preparation:	2011-11-23	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0951	mg/L	1	0.100	95	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0782	mg/L	1	0.100	78	67.5 - 140.8

Sample: 283019 - MW-13

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86736	Date Analyzed:	2011-11-24	Analyzed By:	AG
Prep Batch:	73644	Sample Preparation:	2011-11-23	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0965	mg/L	1	0.100	96	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0808	mg/L	1	0.100	81	67.5 - 140.8

Sample: 283020 - MW-15

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86736	Date Analyzed:	2011-11-24	Analyzed By:	AG
Prep Batch:	73644	Sample Preparation:	2011-11-23	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0953	mg/L	1	0.100	95	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0786	mg/L	1	0.100	79	67.5 - 140.8

Sample: 283021 - MW-14

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86736	Date Analyzed:	2011-11-24	Analyzed By:	AG
Prep Batch:	73644	Sample Preparation:	2011-11-23	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0956	mg/L	1	0.100	96	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0812	mg/L	1	0.100	81	67.5 - 140.8

Sample: 283022 - MW-3

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86736	Date Analyzed:	2011-11-24	Analyzed By:	AG
Prep Batch:	73644	Sample Preparation:	2011-11-23	Prepared By:	AG

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Benzene			1	**0.0205**	mg/L	1	0.00100
Toluene	U	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene			1	**0.00170**	mg/L	1	0.00100
Xylene	U	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0924	mg/L	1	0.100	92	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0815	mg/L	1	0.100	82	67.5 - 140.8

Sample: 283023 - RW-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86736	Date Analyzed:	2011-11-24	Analyzed By:	AG
Prep Batch:	73644	Sample Preparation:	2011-11-23	Prepared By:	AG

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Benzene			1	**0.174**	mg/L	1	0.00100
Toluene	U	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene			1	**0.00470**	mg/L	1	0.00100
Xylene			1	**0.00350**	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0954	mg/L	1	0.100	95	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0869	mg/L	1	0.100	87	67.5 - 140.8

Sample: 283024 - RW-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86736	Date Analyzed:	2011-11-24	Analyzed By:	AG
Prep Batch:	73644	Sample Preparation:	2011-11-23	Prepared By:	AG

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Benzene			1	**0.0108**	mg/L	5	0.00100
Toluene	U	U	1	<0.00500	mg/L	5	0.00100
Ethylbenzene	U	U	1	<0.00500	mg/L	5	0.00100
Xylene	U	U	1	<0.00500	mg/L	5	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.461	mg/L	5	0.500	92	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.391	mg/L	5	0.500	78	67.5 - 140.8

Method Blanks

Method Blank (1) QC Batch: 86735

QC Batch: 86735 | Date Analyzed: 2011-11-23 | Analyzed By: AG
Prep Batch: 73644 | QC Preparation: 2011-11-23 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		:	<0.000400	mg/L	0.001
Toluene		:	<0.000300	mg/L	0.001
Ethylbenzene		:	<0.000300	mg/L	0.001
Xylene		:	<0.000333	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0901	mg/L	1	0.100	90	61.1 - 118.4
4-Bromofluorobenzene (4-BFB)			0.0748	mg/L	1	0.100	75	45.9 - 126.4

Method Blank (1) QC Batch: 86736

QC Batch: 86736 | Date Analyzed: 2011-11-24 | Analyzed By: AG
Prep Batch: 73644 | QC Preparation: 2011-11-23 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		:	<0.000400	mg/L	0.001
Toluene		:	<0.000300	mg/L	0.001
Ethylbenzene		:	<0.000300	mg/L	0.001
Xylene		:	<0.000333	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0888	mg/L	1	0.100	89	61.1 - 118.4
4-Bromofluorobenzene (4-BFB)			0.0709	mg/L	1	0.100	71	45.9 - 126.4

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 86735 | Date Analyzed: 2011-11-23 | Analyzed By: AG
Prep Batch: 73644 | QC Preparation: 2011-11-23 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		:	0.103	mg/L	1	0.100	<0.000400	103	76.8 - 120.3
Toluene		:	0.0966	mg/L	1	0.100	<0.000300	97	80.9 - 122.2
Ethylbenzene		:	0.0914	mg/L	1	0.100	<0.000300	91	72.7 - 120.2
Xylene		:	0.272	mg/L	1	0.300	<0.000333	91	72.1 - 121.5

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		:	0.107	mg/L	1	0.100	<0.000400	107	76.8 - 120.3	4	20
Toluene		:	0.0999	mg/L	1	0.100	<0.000300	100	80.9 - 122.2	3	20
Ethylbenzene		:	0.0950	mg/L	1	0.100	<0.000300	95	72.7 - 120.2	4	20
Xylene		:	0.285	mg/L	1	0.300	<0.000333	95	72.1 - 121.5	5	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)	0.0908	0.0929	mg/L	1	0.100	91	93	61.9 - 119.2
4-Bromofluorobenzene (4-BFB)	0.0873	0.0892	mg/L	1	0.100	87	89	56.4 - 127.9

Laboratory Control Spike (LCS-1)

QC Batch: 86736 | Date Analyzed: 2011-11-24 | Analyzed By: AG
Prep Batch: 73644 | QC Preparation: 2011-11-23 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		:	0.100	mg/L	1	0.100	<0.000400	100	76.8 - 120.3
Toluene		:	0.0934	mg/L	1	0.100	<0.000300	93	80.9 - 122.2
Ethylbenzene		:	0.0877	mg/L	1	0.100	<0.000300	88	72.7 - 120.2
Xylene		:	0.261	mg/L	1	0.300	<0.000333	87	72.1 - 121.5

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	<0.000400	102	76.8 - 120.3	2	20
Toluene		1	0.0966	mg/L	1	0.100	<0.000300	97	80.9 - 122.2	3	20
Ethylbenzene		1	0.0911	mg/L	1	0.100	<0.000300	91	72.7 - 120.2	4	20
Xylene		1	0.271	mg/L	1	0.300	<0.000333	90	72.1 - 121.5	4	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)	0.0873	0.0878	mg/L	1	0.100	87	88	61.9 - 119.2
4-Bromofluorobenzene (4-BFB)	0.0828	0.0840	mg/L	1	0.100	83	84	56.4 - 127.9

Matrix Spike (MS-1) Spiked Sample: 283011

QC Batch: 86735 | Date Analyzed: 2011-11-23 | Analyzed By: AG
Prep Batch: 73644 | QC Preparation: 2011-11-23 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	4.56	mg/L	10	1.00	3.5887	97	66.9 - 128.2
Toluene		1	2.47	mg/L	10	1.00	1.4592	101	81.6 - 122.9
Ethylbenzene		1	1.21	mg/L	10	1.00	0.3168	89	62.7 - 117.9
Xylene		1	3.82	mg/L	10	3.00	1.1003	91	62.9 - 118.2

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	4.87	mg/L	10	1.00	3.5887	128	66.9 - 128.2	7	20
Toluene		1	2.66	mg/L	10	1.00	1.4592	120	81.6 - 122.9	7	20
Ethylbenzene		1	1.33	mg/L	10	1.00	0.3168	101	62.7 - 117.9	9	20
Xylene		1	4.15	mg/L	10	3.00	1.1003	102	62.9 - 118.2	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)	0.956	1.00	mg/L	10	1	96	100	58.6 - 119.7
4-Bromofluorobenzene (4-BFB)	0.932	1.03	mg/L	10	1	93	103	52.2 - 135.8

Matrix Spike (MS-1) Spiked Sample: 283024

QC Batch: 86736 | Date Analyzed: 2011-11-24 | Analyzed By: AG
Prep Batch: 73644 | QC Preparation: 2011-11-23 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		:	0.502	mg/L	5	0.500	0.0108	98	66.9 - 128.2
Toluene		:	0.460	mg/L	5	0.500	<0.00150	92	81.6 - 122.9
Ethylbenzene		:	0.434	mg/L	5	0.500	<0.00150	87	62.7 - 117.9
Xylene		:	1.29	mg/L	5	1.50	<0.00166	86	62.9 - 118.2

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		:	0.506	mg/L	5	0.500	0.0108	99	66.9 - 128.2	1	20
Toluene		:	0.466	mg/L	5	0.500	<0.00150	93	81.6 - 122.9	1	20
Ethylbenzene		:	0.439	mg/L	5	0.500	<0.00150	88	62.7 - 117.9	1	20
Xylene		:	1.30	mg/L	5	1.50	<0.00166	87	62.9 - 118.2	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)	0.451	0.450	mg/L	5	0.5	90	90	58.6 - 119.7
4-Bromofluorobenzene (4-BFB)	0.436	0.444	mg/L	5	0.5	87	89	52.2 - 135.8

Calibration Standards

Standard (CCV-1)

QC Batch: 86735 | Date Analyzed: 2011-11-23 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.109	109	80 - 120	2011-11-23
Toluene		1	mg/L	0.100	0.100	100	80 - 120	2011-11-23
Ethylbenzene		1	mg/L	0.100	0.0954	95	80 - 120	2011-11-23
Xylene		1	mg/L	0.300	0.286	95	80 - 120	2011-11-23

Standard (CCV-2)

QC Batch: 86735 | Date Analyzed: 2011-11-23 | Analyzed By: AG

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	2011-11-23
Toluene		1	mg/L	0.100	0.0968	97	80 - 120	2011-11-23
Ethylbenzene		1	mg/L	0.100	0.0893	89	80 - 120	2011-11-23
Xylene		1	mg/L	0.300	0.269	90	80 - 120	2011-11-23

Standard (CCV-3)

QC Batch: 86735 | Date Analyzed: 2011-11-23 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.106	106	80 - 120	2011-11-23
Toluene		1	mg/L	0.100	0.0996	100	80 - 120	2011-11-23
Ethylbenzene		1	mg/L	0.100	0.0933	93	80 - 120	2011-11-23
Xylene		1	mg/L	0.300	0.279	93	80 - 120	2011-11-23

Standard (CCV-1)

QC Batch: 86736 | Date Analyzed: 2011-11-24 | Analyzed By: AG

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	2011-11-24
Toluene		1	mg/L	0.100	0.0974	97	80 - 120	2011-11-24
Ethylbenzene		1	mg/L	0.100	0.0926	93	80 - 120	2011-11-24
Xylene		1	mg/L	0.300	0.274	91	80 - 120	2011-11-24

Standard (CCV-2)

QC Batch: 86736 | Date Analyzed: 2011-11-24 | Analyzed By: AG

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	2011-11-24
Toluene		1	mg/L	0.100	0.102	102	80 - 120	2011-11-24
Ethylbenzene		1	mg/L	0.100	0.0966	97	80 - 120	2011-11-24
Xylene		1	mg/L	0.300	0.288	96	80 - 120	2011-11-24

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	T104704392-10-TX	Midland

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.
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 # 11112306

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: Nova safety & environmental | Phone #: 432-520-7720

Address: (Street, City, Zip) 2057 Commerce Dr. Midland TX 79703 | Fax #:

Contact Person: Ron Rounsaville | E-mail:

Invoice to: (If different from above)

Project #: | Project Name: HDD-90-23

Project Location (including state): | Sampler Signature: Ryan Haskins

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, Fl, S04, NO3, NO2, Alkalinity	Na, Ca, Mg, K, TDS, EC					Turn Around Time if different from standard	Hold
283012	MW 8	3	VOA	X				X				X		11-21	1250		X																						
013	MW 16													11-21	1310																								
014	MW 9													11-21	1325																								
015	MW 4													11-22	1335																								
016	MW 5													11-21	1350																								
017	MW 12													11-21	1405																								
018	MW 17													11-21	1420																								
019	MW 13													11-21	1430																								
020	MW 15	2	VOA											11-21	1445																								
021	MW 14	3												11-21	1500																								
022	MW 3	1												11-21	1525																								

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
Ryan Haskins	Nova	11-23-11	0800		T/A	11/23/11	8:28	INST 9.9 °C, OBS °C, COR °C
								INST °C, OBS °C, COR °C
								INST °C, OBS °C, COR °C

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

REMARKS:
Midland

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

Carrier #

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

ORIGINAL COPY

LAB Order ID # 11112306

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

Company Name: Nova safety and environmental **Phone #:** (432) 520-7720

Address: (Street, City, Zip) 2057 Commerce Dr. Midland TX. 79703 **Fax #:**

Contact Person: Ron Ramsaville **E-mail:**

Invoice to:
(If different from above)

Project #: **Project Name:** HDO-90-23

Project Location (including state): **Sampler Signature:** Ryan Hoskins

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, Fl, SO4, NO3, NO2, Alkalinity	Na, Ca, Mg, K, TDS, EC						Turn Around Time if different from standard	Hold
22-023	RW 1	3	VOA	X				Y				X		11-21	1600		X																							
024	RW 2	1	1	1				1				1		1	1635		1																							

Relinquished by:	Company:	Date:	Time:	Received By:	Company:	Date:	Time:	
Ryan Hoskins	Nova	11-23-11	0800		T/A	11/23/11	8:28	INST 9.9 °C OBS °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:	INST °C OBS °C COR °C

LAB USE ONLY
Int Cool Y N
Headspace Y N NA
Log-in-Review

REMARKS: Midland

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

Carrier #

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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 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
8015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Ron Rounsaville
Nova Safety & Environmental
2057 Commerce St.
Midland, TX, 79703

Report Date: January 5, 2012

Work Order: 11122011

Project Location: New Mexico
Project Name: HDO
Project Number: TNM-HDO-90-23

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
284927	RW-1	water	2011-12-16	11:10	2011-12-19
284928	MW-14	water	2011-12-16	11:00	2011-12-19
284929	MW-3	water	2011-12-16	11:20	2011-12-19

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 HDO were received by TraceAnalysis, Inc. on 2011-12-19 and assigned to work order 11122011. Samples for work order 11122011 were received intact at a temperature of 7.1 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
PAH	S 8270D	74399	2012-12-22 at 15:00	87624	2012-01-05 at 11:26

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 11122011 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: 284927 - RW-1

Laboratory:	Lubbock				
Analysis:	PAH	Analytical Method:	S 8270D	Prep Method:	S 3510C
QC Batch:	87624	Date Analyzed:	2012-01-05	Analyzed By:	MN
Prep Batch:	74399	Sample Preparation:	2012-12-22	Prepared By:	MN

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Naphthalene		1	**0.000437**	mg/L	0.913	0.000200
2-Methylnaphthalene	U	1	<0.000183	mg/L	0.913	0.000200
1-Methylnaphthalene			**0.000184**	mg/L	0.913	0.000200
Acenaphthylene	U	1	<0.000183	mg/L	0.913	0.000200
Acenaphthene	U	1	<0.000183	mg/L	0.913	0.000200
Dibenzofuran		1	**0.000625**	mg/L	0.913	0.000200
Fluorene		1	**0.000419**	mg/L	0.913	0.000200
Anthracene	U	1	<0.000183	mg/L	0.913	0.000200
Phenanthrene			**0.000265**	mg/L	0.913	0.000200
Fluoranthene	U		<0.000183	mg/L	0.913	0.000200
Pyrene	U	1	<0.000183	mg/L	0.913	0.000200
Benzo(a)anthracene	U		<0.000183	mg/L	0.913	0.000200
Chrysene	U	1	<0.000183	mg/L	0.913	0.000200
Benzo(b)fluoranthene	U		<0.000183	mg/L	0.913	0.000200
Benzo(k)fluoranthene	Qr,U	1	<0.000183	mg/L	0.913	0.000200
Benzo(a)pyrene	U	1	<0.000183	mg/L	0.913	0.000200
Indeno(1,2,3-cd)pyrene	U	1	<0.000183	mg/L	0.913	0.000200
Dibenzo(a,h)anthracene	U	1	<0.000183	mg/L	0.913	0.000200
Benzo(g,h,i)perylene	U		<0.000183	mg/L	0.913	0.000200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5			0.0405	mg/L	0.913	0.0800	51	10 - 117
2-Fluorobiphenyl			0.0426	mg/L	0.913	0.0800	53	10 - 99
Terphenyl-d14			0.0398	mg/L	0.913	0.0800	50	22.6 - 115

Sample: 284928 - MW-14

Laboratory:	Lubbock				
Analysis:	PAH	Analytical Method:	S 8270D	Prep Method:	S 3510C
QC Batch:	87624	Date Analyzed:	2012-01-05	Analyzed By:	MN
Prep Batch:	74399	Sample Preparation:	2012-12-22	Prepared By:	MN

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
Naphthalene	U	1	<0.000184		mg/L	0.922	0.000200
2-Methylnaphthalene	U	1	<0.000184		mg/L	0.922	0.000200
1-Methylnaphthalene	U		<0.000184		mg/L	0.922	0.000200
Acenaphthylene	U	1	<0.000184		mg/L	0.922	0.000200
Acenaphthene	U	1	<0.000184		mg/L	0.922	0.000200
Dibenzofuran		1	**0.00215**		mg/L	0.922	0.000200
Fluorene	U	1	<0.000184		mg/L	0.922	0.000200
Anthracene	U	1	<0.000184		mg/L	0.922	0.000200
Phenanthrene	U		<0.000184		mg/L	0.922	0.000200
Fluoranthene	U		<0.000184		mg/L	0.922	0.000200
Pyrene	U	1	<0.000184		mg/L	0.922	0.000200
Benzo(a)anthracene	U		<0.000184		mg/L	0.922	0.000200
Chrysene	U	1	<0.000184		mg/L	0.922	0.000200
Benzo(b)fluoranthene	U		<0.000184		mg/L	0.922	0.000200
Benzo(k)fluoranthene	Q-,U	1	<0.000184		mg/L	0.922	0.000200
Benzo(a)pyrene	U	1	<0.000184		mg/L	0.922	0.000200
Indeno(1,2,3-cd)pyrene	U	1	<0.000184		mg/L	0.922	0.000200
Dibenzo(a,h)anthracene	U	1	<0.000184		mg/L	0.922	0.000200
Benzo(g,h,i)perylene	U		<0.000184		mg/L	0.922	0.000200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5			0.0425	mg/L	0.922	0.0800	53	10 - 117
2-Fluorobiphenyl			0.0453	mg/L	0.922	0.0800	57	10 - 99
Terphenyl-d14			0.0481	mg/L	0.922	0.0800	60	22.6 - 115

Sample: 284929 - MW-3

Laboratory:	Lubbock				
Analysis:	PAH	Analytical Method:	S 8270D	Prep Method:	S 3510C
QC Batch:	87624	Date Analyzed:	2012-01-05	Analyzed By:	MN
Prep Batch:	74399	Sample Preparation:	2012-12-22	Prepared By:	MN

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
Naphthalene	U	1	<0.000184		mg/L	0.922	0.000200

continued ...

sample 284929 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
2-Methylnaphthalene	U	1	<0.000184	mg/L	0.922	0.000200
1-Methylnaphthalene	U		<0.000184	mg/L	0.922	0.000200
Acenaphthylene	U	1	<0.000184	mg/L	0.922	0.000200
Acenaphthene	U	1	<0.000184	mg/L	0.922	0.000200
Dibenzofuran		1	**0.00100**	mg/L	0.922	0.000200
Fluorene	U	1	<0.000184	mg/L	0.922	0.000200
Anthracene	U	1	<0.000184	mg/L	0.922	0.000200
Phenanthrene	U		<0.000184	mg/L	0.922	0.000200
Fluoranthene	U		<0.000184	mg/L	0.922	0.000200
Pyrene	U	1	<0.000184	mg/L	0.922	0.000200
Benzo(a)anthracene	U		<0.000184	mg/L	0.922	0.000200
Chrysene	U	1	<0.000184	mg/L	0.922	0.000200
Benzo(b)fluoranthene	U		<0.000184	mg/L	0.922	0.000200
Benzo(k)fluoranthene	QF,U	1	<0.000184	mg/L	0.922	0.000200
Benzo(a)pyrene	U	1	<0.000184	mg/L	0.922	0.000200
Indeno(1,2,3-cd)pyrene	U	1	<0.000184	mg/L	0.922	0.000200
Dibenzo(a,h)anthracene	U	1	<0.000184	mg/L	0.922	0.000200
Benzo(g,h,i)perylene	U		<0.000184	mg/L	0.922	0.000200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5			0.0407	mg/L	0.922	0.0800	51	10 - 117
2-Fluorobiphenyl			0.0416	mg/L	0.922	0.0800	52	10 - 99
Terphenyl-d14			0.0424	mg/L	0.922	0.0800	53	22.6 - 115

Method Blanks

Method Blank (1) QC Batch: 87624

QC Batch:	87624	Date Analyzed:	2012-01-05	Analyzed By:	MN
Prep Batch:	74399	QC Preparation:	2012-12-22	Prepared By:	MN

Parameter	Flag	Cert	MDL Result	Units	RL
Naphthalene		1	<0.0000904	mg/L	0.0002
2-Methylnaphthalene		1	<0.000184	mg/L	0.0002
1-Methylnaphthalene			<0.000120	mg/L	0.0002
Acenaphthylene		1	<0.000101	mg/L	0.0002
Acenaphthene		1	<0.000122	mg/L	0.0002
Dibenzofuran		1	<0.000119	mg/L	0.0002
Fluorene		1	<0.000198	mg/L	0.0002
Anthracene		1	<0.000190	mg/L	0.0002
Phenanthrene			<0.000190	mg/L	0.0002
Fluoranthene			<0.000122	mg/L	0.0002
Pyrene		1	<0.000142	mg/L	0.0002
Benzo(a)anthracene			<0.000138	mg/L	0.0002
Chrysene		1	<0.000155	mg/L	0.0002
Benzo(b)fluoranthene			<0.000179	mg/L	0.0002
Benzo(k)fluoranthene		1	<0.000185	mg/L	0.0002
Benzo(a)pyrene		1	<0.000169	mg/L	0.0002
Indeno(1,2,3-cd)pyrene		1	<0.000139	mg/L	0.0002
Dibenzo(a,h)anthracene		1	<0.000107	mg/L	0.0002
Benzo(g,h,i)perylene			<0.000143	mg/L	0.0002

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5			0.0369	mg/L	1	0.0800	46	10 - 117
2-Fluorobiphenyl			0.0323	mg/L	1	0.0800	40	10 - 99
Terphenyl-d14			0.0357	mg/L	1	0.0800	45	22.6 - 115

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 87624 | Date Analyzed: 2012-01-05 | Analyzed By: MN
Prep Batch: 74399 | QC Preparation: 2012-12-22 | Prepared By: MN

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Naphthalene		:	0.0281	mg/L	1	0.0800	<0.0000904	35	10 - 89.9
2-Methylnaphthalene		:	0.0325	mg/L	1	0.0800	<0.000184	41	13.8 - 98.4
1-Methylnaphthalene			0.0312	mg/L	1	0.0800	<0.000120	39	13.1 - 103
Acenaphthylene		:	0.0370	mg/L	1	0.0800	<0.000101	46	20 - 104
Acenaphthene		:	0.0357	mg/L	1	0.0800	<0.000122	45	21.6 - 94.6
Dibenzofuran		:	0.0392	mg/L	1	0.0800	<0.000119	49	22.9 - 74.9
Fluorene		:	0.0396	mg/L	1	0.0800	<0.000198	50	30.8 - 109
Anthracene		:	0.0426	mg/L	1	0.0800	<0.000190	53	37.6 - 96.4
Phenanthrene			0.0430	mg/L	1	0.0800	<0.000190	54	42.4 - 99.8
Fluoranthene			0.0469	mg/L	1	0.0800	<0.000122	59	48 - 118
Pyrene		:	0.0457	mg/L	1	0.0800	<0.000142	57	45.3 - 109
Benzo(a)anthracene			0.0548	mg/L	1	0.0800	<0.000138	68	48 - 113
Chrysene		:	0.0619	mg/L	1	0.0800	<0.000155	77	35.2 - 175
Benzo(b)fluoranthene			0.0384	mg/L	1	0.0800	<0.000179	48	16.6 - 106
Benzo(k)fluoranthene		:	0.0367	mg/L	1	0.0800	<0.000185	46	36.8 - 99.4
Benzo(a)pyrene		:	0.0384	mg/L	1	0.0800	<0.000169	48	32.3 - 99.7
Indeno(1,2,3-cd)pyrene		:	0.0420	mg/L	1	0.0800	<0.000139	52	34.1 - 106
Dibenzo(a,h)anthracene		:	0.0559	mg/L	1	0.0800	<0.000107	70	47.1 - 103
Benzo(g,h,i)perylene			0.0407	mg/L	1	0.0800	<0.000143	51	21.9 - 112

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
Naphthalene		:	0.0317	mg/L	1	0.0800	<0.0000904	40	10 - 89.9	12	20
2-Methylnaphthalene		:	0.0374	mg/L	1	0.0800	<0.000184	47	13.8 - 98.4	14	20
1-Methylnaphthalene			0.0358	mg/L	1	0.0800	<0.000120	45	13.1 - 103	14	20
Acenaphthylene		:	0.0410	mg/L	1	0.0800	<0.000101	51	20 - 104	10	20
Acenaphthene		:	0.0398	mg/L	1	0.0800	<0.000122	50	21.6 - 94.6	11	20
Dibenzofuran		:	0.0434	mg/L	1	0.0800	<0.000119	54	22.9 - 74.9	10	20
Fluorene		:	0.0426	mg/L	1	0.0800	<0.000198	53	30.8 - 109	7	20
Anthracene		:	0.0475	mg/L	1	0.0800	<0.000190	59	37.6 - 96.4	11	20
Phenanthrene			0.0484	mg/L	1	0.0800	<0.000190	60	42.4 - 99.8	12	20
Fluoranthene			0.0516	mg/L	1	0.0800	<0.000122	64	48 - 118	10	20
Pyrene		:	0.0488	mg/L	1	0.0800	<0.000142	61	45.3 - 109	7	20

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzo(a)anthracene			0.0608	mg/L	1	0.0800	<0.000138	76	48 - 113	10	20
Chrysene		:	0.0687	mg/L	1	0.0800	<0.000155	86	35.2 - 175	10	20
Benzo(b)fluoranthene			0.0390	mg/L	1	0.0800	<0.000179	49	16.6 - 106	2	20
Benzo(k)fluoranthene	Q+	Q+	0.0458	mg/L	1	0.0800	<0.000185	57	36.8 - 99.4	22	20
Benzo(a)pyrene		:	0.0434	mg/L	1	0.0800	<0.000169	54	32.3 - 99.7	12	20
Indeno(1,2,3-cd)pyrene		:	0.0470	mg/L	1	0.0800	<0.000139	59	34.1 - 106	11	20
Dibenzo(a,h)anthracene		:	0.0627	mg/L	1	0.0800	<0.000107	78	47.1 - 103	12	20
Benzo(g,h,i)perylene			0.0454	mg/L	1	0.0800	<0.000143	57	21.9 - 112	11	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
Nitrobenzene-d5	0.0368	0.0403	mg/L	1	0.0800	46	50	10 - 117
2-Fluorobiphenyl	0.0358	0.0402	mg/L	1	0.0800	45	50	10 - 99
Terphenyl-d14	0.0525	0.0562	mg/L	1	0.0800	66	70	22.6 - 115

Calibration Standards

Standard (CCV-2)

QC Batch: 87624 | Date Analyzed: 2012-01-05 | Analyzed By: MN

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Naphthalene		1	mg/L	60.0	55.0	92	80 - 120	2012-01-05
2-Methylnaphthalene		1	mg/L	60.0	55.2	92	80 - 120	2012-01-05
1-Methylnaphthalene			mg/L	60.0	56.0	93	80 - 120	2012-01-05
Acenaphthylene		1	mg/L	60.0	55.0	92	80 - 120	2012-01-05
Acenaphthene		1	mg/L	60.0	55.4	92	80 - 120	2012-01-05
Dibenzofuran		1	mg/L	60.0	53.6	89	80 - 120	2012-01-05
Fluorene		1	mg/L	60.0	51.1	85	80 - 120	2012-01-05
Anthracene		1	mg/L	60.0	53.2	89	80 - 120	2012-01-05
Phenanthrene			mg/L	60.0	53.7	90	80 - 120	2012-01-05
Fluoranthene			mg/L	60.0	60.8	101	80 - 120	2012-01-05
Pyrene		1	mg/L	60.0	51.8	86	80 - 120	2012-01-05
Benzo(a)anthracene			mg/L	60.0	58.8	98	80 - 120	2012-01-05
Chrysene		1	mg/L	60.0	55.0	92	80 - 120	2012-01-05
Benzo(b)fluoranthene			mg/L	60.0	49.6	83	80 - 120	2012-01-05
Benzo(k)fluoranthene		1	mg/L	60.0	51.8	86	80 - 120	2012-01-05
Benzo(a)pyrene		1	mg/L	60.0	52.8	88	80 - 120	2012-01-05
Indeno(1,2,3-cd)pyrene		1	mg/L	60.0	52.9	88	80 - 120	2012-01-05
Dibenzo(a,h)anthracene		1	mg/L	60.0	53.1	88	80 - 120	2012-01-05
Benzo(g,h,i)perylene			mg/L	60.0	53.0	88	80 - 120	2012-01-05

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
Nitrobenzene-d5			55.7	mg/L	1	60.0	93	-
2-Fluorobiphenyl			57.9	mg/L	1	60.0	96	-
Terphenyl-d14			52.4	mg/L	1	60.0	87	-

Standard (CCV-3)

QC Batch: 87624 | Date Analyzed: 2012-01-05 | Analyzed By: MN

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Naphthalene		1	mg/L	60.0	55.9	93	80 - 120	2012-01-05

continued ...

standard continued ...

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
2-Methylnaphthalene		1	mg/L	60.0	55.4	92	80 - 120	2012-01-05
1-Methylnaphthalene			mg/L	60.0	55.7	93	80 - 120	2012-01-05
Acenaphthylene		1	mg/L	60.0	55.5	92	80 - 120	2012-01-05
Acenaphthene		1	mg/L	60.0	56.2	94	80 - 120	2012-01-05
Dibenzofuran		1	mg/L	60.0	54.2	90	80 - 120	2012-01-05
Fluorene		1	mg/L	60.0	52.7	88	80 - 120	2012-01-05
Anthracene		1	mg/L	60.0	53.3	89	80 - 120	2012-01-05
Phenanthrene			mg/L	60.0	54.0	90	80 - 120	2012-01-05
Fluoranthene			mg/L	60.0	59.4	99	80 - 120	2012-01-05
Pyrene		1	mg/L	60.0	55.2	92	80 - 120	2012-01-05
Benzo(a)anthracene			mg/L	60.0	58.8	98	80 - 120	2012-01-05
Chrysene		1	mg/L	60.0	56.0	93	80 - 120	2012-01-05
Benzo(b)fluoranthene			mg/L	60.0	48.6	81	80 - 120	2012-01-05
Benzo(k)fluoranthene		1	mg/L	60.0	52.6	88	80 - 120	2012-01-05
Benzo(a)pyrene		1	mg/L	60.0	50.7	84	80 - 120	2012-01-05
Indeno(1,2,3-cd)pyrene		1	mg/L	60.0	53.3	89	80 - 120	2012-01-05
Dibenzo(a,h)anthracene		1	mg/L	60.0	53.8	90	80 - 120	2012-01-05
Benzo(g,h,i)perylene			mg/L	60.0	52.7	88	80 - 120	2012-01-05

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
Nitrobenzene-d5			55.8	mg/L	1	60.0	93	-
2-Fluorobiphenyl			57.5	mg/L	1	60.0	96	-
Terphenyl-d14			55.7	mg/L	1	60.0	93	-

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	T104704219-11-5	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.
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 # 1112211

Page 1 of 1

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: Nova — **Phone #:**

Address: (Street, City, Zip) — **Fax #:**

Contact Person: Ron Rounsaville — **E-mail:**

Invoice to: (If different from above)

Project #: — **Project Name:** TNM HDO 90-23

Project Location (including state): — **Sampler Signature:** David Fletcher

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
284927	RW1	1	1L Amber	X									X	12/14/11	1110
928	MW14	↓	↓	↓									↓		1100
929	MW3	↓	↓	↓									↓	↓	1120

ANALYSIS REQUEST (Circle or Specify Method No.):
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 (X)
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, Fl, S04, NO3, NO2, Alkalinity
Na, Ca, Mg, K, TDS, EC
Turn Around Time if different from standard
Hold

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
David Fletcher	Nova	12/13/11	1648		TA	12/9/11	10:45	INST 1 °C
								OBS 1 °C
								COR °C
								INST °C
								OBS °C
								COR °C
				Brenda Ward	Trac Lubbock	12/20/11	9:20	INST IR °C
								OBS 3.1 °C
								COR 3.2 °C

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

REMARKS: Rathod

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

Carrier # Carry on 25ZN1744141

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

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