AP - 7

DA #2

ANNUAL MONITORING REPORT

YEAR(S): 2011

2011 ANNUAL GROUNDWATER MONITORING REPORT

DARR ANGELL NO. 2
SW ¼, SE ¼, SECTION 11, TOWNSHIP 15 SOUTH, RANGE 37 EAST
NW ¼, NE ¼, SECTION 14, TOWNSHIP 15 SOUTH, RANGE 37 EAST
PLAINS SRS NUMBER: LF-1999-62
NMOCD REFERENCE NUMBER: AP-007
LEA COUNTY, NEW MEXICO

PLAINS
ALL AMERICAN

March 29, 2012

RECEIVED

MAY 14 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
4 Sites in Lea County, New Mexico

Dear Mr. Hansen:

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

Darr Angell #1	AP-007	Section 11, Township 15 South, Range 37 East, Lea County
Darr Angell #2	AP-007	Section 11, Township 15 South, Range 37 East, Lea County Section 14, Township 15 South, Range 37 East, Lea County
Darr Angell #4	AP-007	Section 11, Township 15 South, Range 37 East, Lea County Section 02, Township 15 South, Range 37 East, Lea County
Denton Station	1R-0234	Section 14, Township 15 South, Range 37 East, Lea County

Conestoga-Rovers & Associates (CRA) 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 CRA personnel in order to verify the accuracy and completeness of these documents. It is based upon these inquiries and reviews that Plains All American submits the enclosed Annual Monitoring Reports for the above facilities.

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

Sincerely,

Jason Henry
Remediation Coordinator
Plains All American

CC: Geoff Leking, NMOCD, Hobbs, NM

Enclosures

CONESTOGA-ROVERS
& ASSOCIATES

RECEIVED

MAY 14 2012

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

2011 ANNUAL GROUNDWATER MONITORING REPORT

DARR ANGELL NO. 2
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PLAINS SRS NUMBER: LF-1999-62
NMOCD REFERENCE NUMBER: AP-007
LEA COUNTY, NEW MEXICO

Prepared For:
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PLAINS ALL AMERICAN PIPELINE, L.P.
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APRIL 2012
REF. NO. 074685(2)

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1.0 INTRODUCTION

This 2011 Annual Groundwater Monitoring Report presents data collected at the Darr Angell No. 2 location (hereafter referred to as the "Site") by Conestoga-Rovers & Associates (CRA) on behalf of Plains Pipeline, L.P. (Plains) in compliance with the New Mexico Oil Conservation Division (NMOCD) correspondence dated May 1998. This report presents groundwater assessment and remediation activities associated with quarterly gauging and sampling events (March, June, September and November/December and bi-weekly light non-aqueous phase liquid (LNAPL) abatement activities performed during the 2011 calendar year.

1.1 SITE LOCATION AND HISTORY

The legal description of the site is SW ¼, SE ¼, Section 11, Township 15 South, Range 37 East and NW ¼, NE ¼, Section 14, Township 15 South, Range 37 East; the site coordinates are latitude 33° 01' 47.0" north and longitude 103° 10' 10.7" west (FIGURE 1). The Site was formerly the responsibility of Enron Oil Trading and Transportation (EOTT); however, the Site is currently the responsibility of Plains. The release was discovered by EOTT employees and submitted on a Release Notification and Corrective Action Form (C-141) on July 29, 1999 to the NMOCD. According to the release report, an estimated 60 barrels of crude oil was released, of which 0 barrels were recovered. The release was reported to have occurred from an 8-inch EOTT pipeline and was attributed to external pipeline corrosion.

Initial Site remediation activities began in August 1999 and consisted of forty soil borings within and around the area of surface staining. In April and May 2000, a previous contractor excavated the area identified by the soil boring investigation as impacted to a depth of approximately 4.5 feet below ground surface (bgs). Impacted soils were stockpiled on-Site. Excavation activated resumed in April and May 2001, with the removal of approximately 3,000 cubic yards of impacted soil. This material was added to soil previously stockpiled on-Site. According to available information, on various dates between April 2000 and December 2002, monitor wells MW-1 though MW-10 and recovery wells RW-1 through RW-7 were installed. Partial backfilling of the open excavation reportedly occurred subsequent to NMOCD approval of a backfill request submitted on March 11, 2002. Backfill materials consisted of previously excavated caliche which had been separated from other excavated material by mechanical screening.

In October 2003, approximately 3,100 cubic yards of excavated soils were placed into a treatment area which was two to three feet in depth. Quarterly mechanical tilling of this stockpile occurred throughout 2004. Analytical results, detailed in the *Site Restoration Work Plan and Proposed Soil Closure Strategy* dated January 2006, indicate total petroleum hydrocarbons (TPH) concentrations within the soil treatment cell were below NMOCD regulatory standards. In a letter from the NMOCD dated April 5, 2006, Plains received approval to backfill the excavation at the Site. In June 2006, the excavation was backfilled with remediated soils contained in the soil treatment cell and contoured to grade. *A Soil Closure Request* was submitted to the NMOCD and on February 19, 2010, Plains received an email approving the soil closure request.

Beginning on May 29, 2004, project management responsibilities were assumed by NOVA. NOVA conducted the 2011 first quarter groundwater sampling event. CRA assumed Site remediation and project management responsibilities on May 2, 2011 and conducted the remaining 2011 groundwater assessment and remediation activities.

Currently, there are ten groundwater monitor wells (MW-1 through MW-4 and MW-6 through MW-11) and seven product recovery wells (RW-1 through RW-7) on-site. Monitor well MW-5 was plugged and abandoned with NMOCD approval on September 14, 2005. Select monitor and recovery wells are equipped with a total fluid pump for LNAPL recovery. All pumps are compressor driven and are periodically relocated depending on LNAPL thickness and product recovery rates in an effort to maximize product abatement at the Site. Monitor and recovery wells which exhibit LNAPL, but were not part of the automated recovery system, were recovered manually. Recovered product is periodically transported to Wasson Station facility for reinjection to the Plains Pipeline system and recovered groundwater is transported to a licensed disposal facility.

2.0 REGULATORY FRAMEWORK

The New Mexico Oil Conservation Division (NMOCD) guidelines require groundwater to be analyzed for potential contaminants as defined by the New Mexico Water Quality Control Commission (NMWQCC) Standards 20.6.2.3103 Sections A. NMQCC 20.6.2.3103 Section A provides the Human Health Standards for Groundwater. The constituents of concern (COCs) in affected groundwater at the Site are LNAPL, benzene, toluene, ethylbenzene, and xylenes (BTEX). In this report, groundwater analytical results for the COCs are compared to the NMWQCC standards as show in the following table:

Analyte	NMWQCC Standard for Groundwater
20.6.2.3103 Section A – Human Health Standard	
Benzene	0.01 mg/L
Toluene	0.75 mg/L
Ethylbenzene	0.75 mg/L
Total Xylenes	0.62 mg/L

The table below is the site sampling schedule approved by the NMOCD in a correspondence dated April 28, 2004 and amended in a NMOCD correspondences dated June 20, 2005.

NMOCD APPROVED SAMPLING SCHEDULE					
Location	**Schedule**	**Location**	**Schedule**	**Location**	**Schedule**
MW-1	Annually	MW-7	Annually	RW-2	Quarterly
MW-2	Quarterly	MW-8	Annually	RW-3	Quarterly
MW-3	Semi-Annually	MW-9	Annually	RW-4	Quarterly
MW-4	Semi-Annually	MW-10	Annually	RW-5	Quarterly
MW-5	Plugged / Abandoned	MW-11	Quarterly	RW-6	Quarterly
MW-6	Annually	RW-1	Quarterly	RW-7	Quarterly

3.0 GROUNDWATER MONITORING ACTIVITIES

NOVA conducted the first quarterly groundwater sampling event on March 4, 2011. The remaining quarterly groundwater monitoring event activities were conducted by CRA on June 16, September 6 and 9, November 28 and December 1, 2011. The Site is monitored with a network of ten monitor wells and seven recovery wells. Wells were sampled in accordance with the sampling scheduled referred to in Section 2.0. Wells containing measureable amount of LNAPL (>0.01 feet) were not sampled. A Site Details Map is presented as FIGURE 2.

3.1 GROUNDWATER MONITORING METHODOLOGY

Prior to purging wells, static fluid levels were measured with an electric interface probe to the nearest hundredth of a foot to obtain groundwater elevation data and assess for the presence of LNAPL. After recording fluid levels, wells not containing LNAPL were purged of three casing volumes of water and then groundwater samples were collected using clean, disposable PVC bailers. Laboratory-supplied sample containers were then filled directly from the bailers. Groundwater samples were then placed on ice in insulated coolers and chilled to a temperature of approximately 4°C (40°F). The coolers were prepared for delivery and proper chain-of-custody documentation accompanied the samples to TraceAnalysis, Inc in Midland, Texas for analysis of BTEX by EPA Method 8021B. In addition, during the December 2011 sampling event one well (MW-3) was also analyzed for Polycyclic Aromatic Hydrocarbons (PAH) by 8270B. The groundwater fluids recovered during the Site activities were containerized onsite in properly labeled and sealed drums or poly tanks and disposed of at an approved salt water disposal (SWD) facility.

3.2 GROUNDWATER MONITORING RESULTS

All depth to groundwater measurements were recorded from the top of casing (TOC) of each well. The gauging data presented below represents corrected calculated groundwater elevations using a specific gravity of 0.81 for wells with measurable amounts of LNAPL and the elevation data obtained from professional surveying activities. The NOVA groundwater elevation data table for the March 2011 gauging event in presented in APPENDIX A. Groundwater gauging data collected by CRA during the June, September and November groundwater monitoring events is presented in TABLE I. Groundwater gradient maps for March, June, September and November 2011 are provided as FIGURES 3, 4, 5 and 6, respectively.

Corrected groundwater elevations ranged from 3,723.56 to 3,726.36 feet in March, from 3,723.86 to 3,725.62 feet in June, from 3,724.45 to 3,725.46 feet in September and from 3,724.38 to 3,725.34 feet in November. LNAPL was encountered in 5 wells during the March 2011 groundwater gauging event and 7 wells during the June, September and November gauging events. LNAPL thicknesses ranged from 0.03 to 7.89 feet in March, from 3.37 to 7.08 feet in June, from 3.62 to 8.04 feet in September and from 2.42 to 8.05 feet in November 2011. The groundwater flow direction is towards the southeast and appears to be consistent with historical data. The average groundwater gradient

observed at the Site during the 2011 groundwater monitoring events was approximately 0.0027 feet/foot.

During the March, June and September 2011 groundwater sampling events two wells were sampled, of which one well (MW-3) detected benzene concentrations above the NMWQCC Standard (0.01 mg/L) in all three events. During the December 2011 sampling event eight wells were sampled, of which one well (MW-3) detected benzene concentration above the NMWQCC Standard. For all wells sampled in 2011 except for MW-3, BTEX results were below laboratory detection limits. During the June and December 2011 sampling event monitor well MW-4 had insufficient water in the water column for sampling. In December, monitor well (MW-3) was submitted for PAH analysis, and the results were below NMWQCC Standards for all constituents analyzed. Groundwater BTEX analytical results are summarized in TABLE II. Groundwater PAH results are summarized in TABLE III. Groundwater BTEX concentration maps for the March, June, September and December 2011 groundwater sampling events are presented as FIGURES 7, 8, 9 and 10, respectively. Copies of the certified laboratory reports and chain-of-custody documentation are attached in APPENDIX B.

4.0 CORRECTIVE ACTION

On September 13, 2011 CRA mobilized to the Site with Straub Corporation (Straub) to swab and brush the screens on three recovery wells; RW-3, RW-4 and RW-6. The screen cleaning was an attempt to increase product recovery in those wells by removing scale from the screened interval. CRA mobilized to the Site twice a week to gauge and manually recover fluids from wells that were not included in the automated LNAPL recovery system, but had product present in the fluids column. Wells which were equipped with total fluids pumps each quarter are identified on Figures 7, 8, 9 and 10. Inspections and maintenance of the operating systems on Site were also conducted weekly. This included inspections and maintenance of the compressor (i.e. oil changes, drain water), total fluids pumps (i.e. cleaning) and any other "house-keeping" needed at the Site to maintain the most efficient product recovery system as possible. Periodically and as needed, CRA personnel adjusted the total fluids pump intervals in the wells as an effort to increase LNAPL recovery.

From June to December 2011, CRA recovered approximately 1,313 gallons (31.26 barrels) of product from the Site. Approximately 19,821 gallons (471.93 barrels) of product have been recovered from the start of the product abatement program.

5.0 SUMMARY OF FINDINGS

Based on groundwater assessment monitoring and remedial activities performed by CRA at the Site in 2011, the following summary of findings is presented:

- The initial release was discovered by EOTT employees and submitted on a Release Notification and Corrective Action Form (C-141) on July 29, 1999 to the NMOCD. According to the release report, an estimated 60 barrels of crude oil was released of which 0 barrels were recovered;
- CRA assumed remediation responsibility of the Site on May 2, 2011;
- The Site is monitored with a network of ten groundwater monitor wells (MW-1 through MW-4 and MW-6 through MW-11) and seven product recovery wells (RW-1 through RW-7). Monitor well MW-5 was plugged and abandoned with NMOCD approval on September 14, 2005. Select monitor and recovery wells are equipped with a total fluid pump for LNAPL recovery. All pumps are compressor driven and are periodically relocated depending on LNAPL thickness and product recovery rates in an effort to maximize product recovery at the Site;
- NOVA conducted the first quarterly groundwater sampling event on March 4, 2011. The remaining quarterly groundwater monitoring event activities were conducted by CRA on June 16, September 6 and 9, November 28 and December 1, 2011;
- The groundwater flow direction at the Site is to the southeast and appears to be consistent with historical data. The average groundwater gradient observed at the Site during the 2011 groundwater monitoring events was approximately 0.0027 feet/foot;
- LNAPL was encountered in 5 wells during the March 2011 groundwater gauging event and 7 wells during the June, September and November gauging events. LNAPL thicknesses ranged from 0.03 to 7.89 feet in March, from 3.37 to 7.08 feet in June, from 3.62 to 8.04 feet in September and from 2.42 to 8.05 feet in November 2011;
- During the March, June and September 2011 groundwater sampling events two wells were sampled, of which one well (MW-3) detected benzene concentrations above the NMWQCC Standard (0.01 mg/L) in all three events;
- During the December 2011 sampling event eight wells were sampled, of which one well (MW-3) detected benzene concentration above the NMWQCC Standard. For all samples in 2011 except for MW-3, BTEX results were below laboratory limits;
- On September 13, 2011 CRA mobilized to the Site with Straub to swab and brush the screens on three recovery wells; RW-3, RW-4 and RW-6;
- CRA performed weekly inspections and maintenance of the product recovery system on Site;
- Wells which contain measureable product, but are not equipped with a total fluids pump, are manually recovered for product bi-weekly; and
- From June to December 2011, CRA recovered approximately 1,313 gallons (31.26 barrels) of product from the Site. Approximately 19,821 gallons (471.93 bbls) of product have been recovered from the start of the product abatement program.

6.0 RECOMMENDATIONS

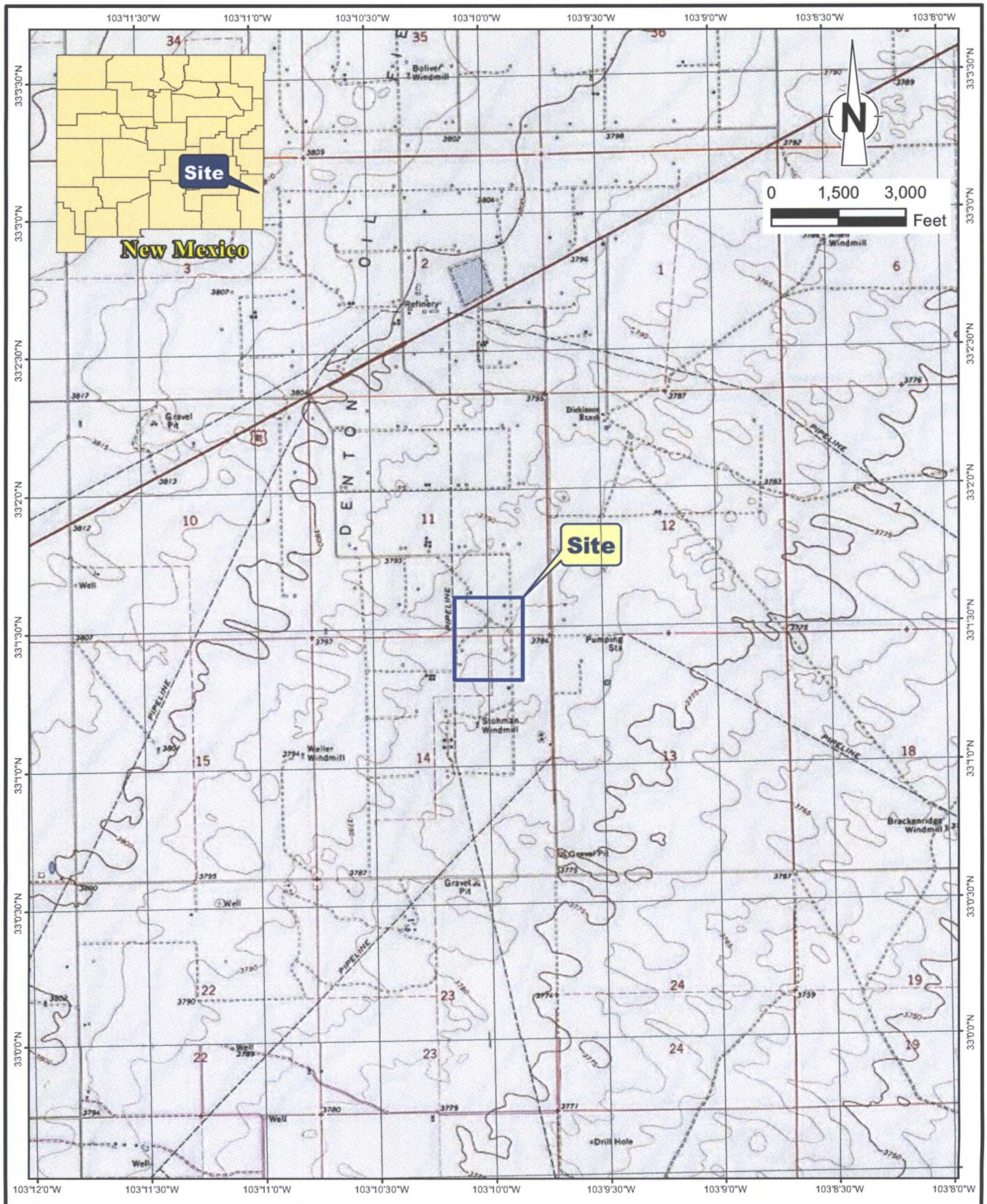
Based upon the data and conclusions presented in this report, the following is recommended:

- Continue quarterly groundwater monitoring events in 2012 with annual reporting to the NMOCD;
- Continue bi-weekly LNAPL abatement in 2012. This includes continuation of moving total fluids pumps and adjusting product recovery schedules to maximize product recovery; and
- Begin Mobile Dual Phase Extraction (MDPE) events to increase product recovery at the Site.

All of Which is Respectfully Submitted,
CONESTOGA-ROVERS & ASSOCIATES

Todd Wells
Project Manager

Thomas C. Larson
Midland Branch Manager

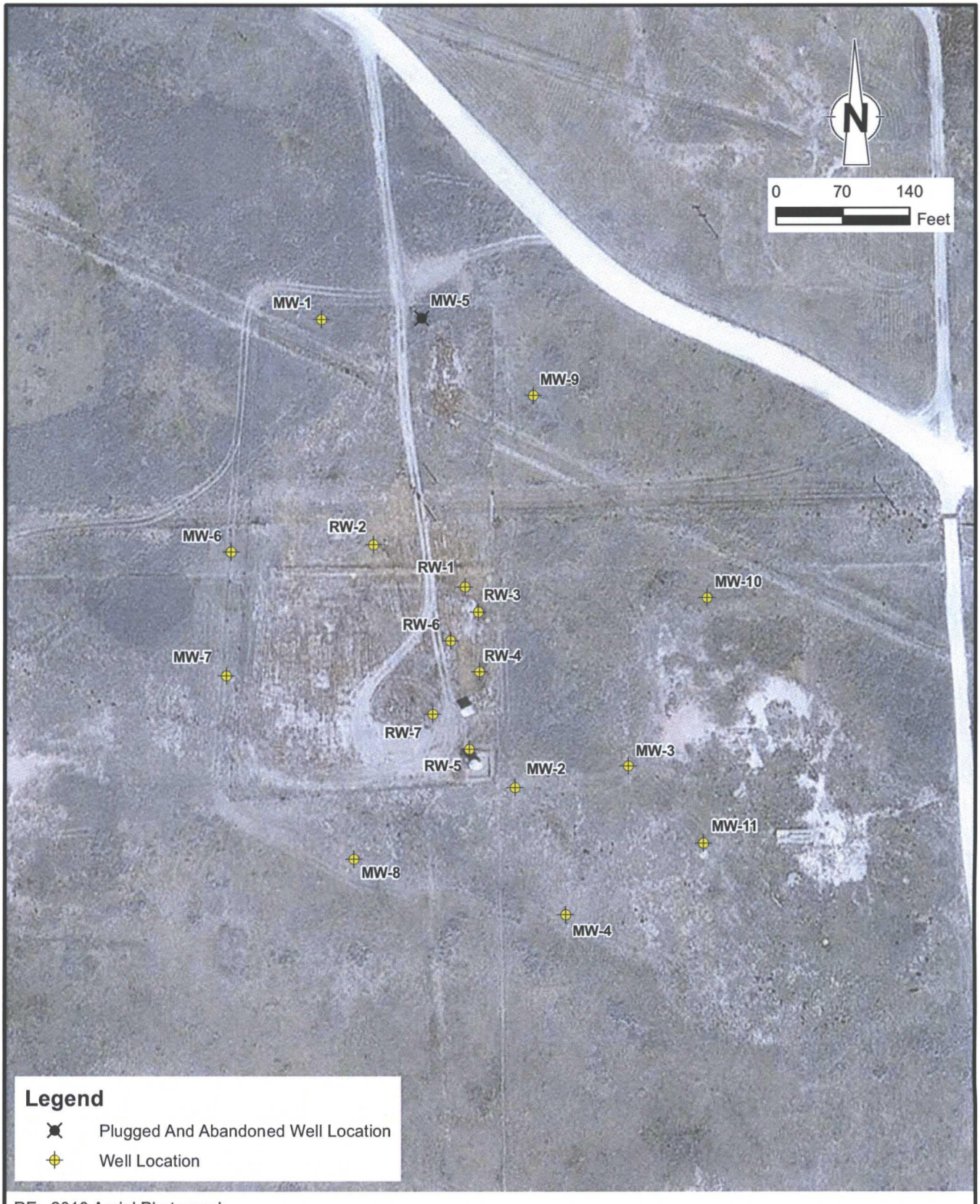


RE: USGS 7.5 Minute Topographic Maps.

figure 1
SITE LOCATION MAP
DARR ANGELL NO. 2
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

CRA

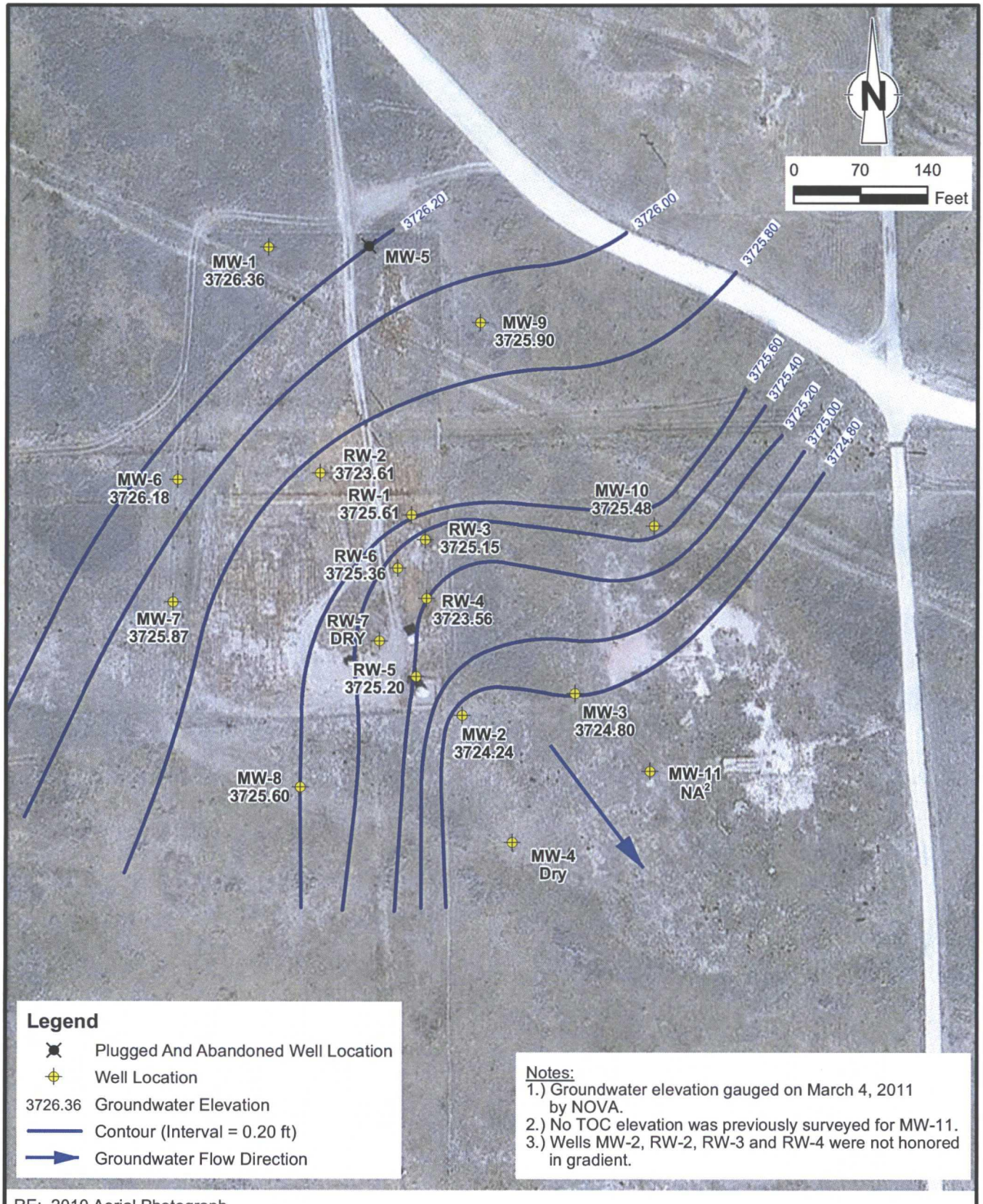
074685-11(002)PR-BR001 Apr 9/2012



RE: 2010 Aerial Photograph

figure 2
SITE DETAILS MAP
DARR ANGELL NO. 2
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

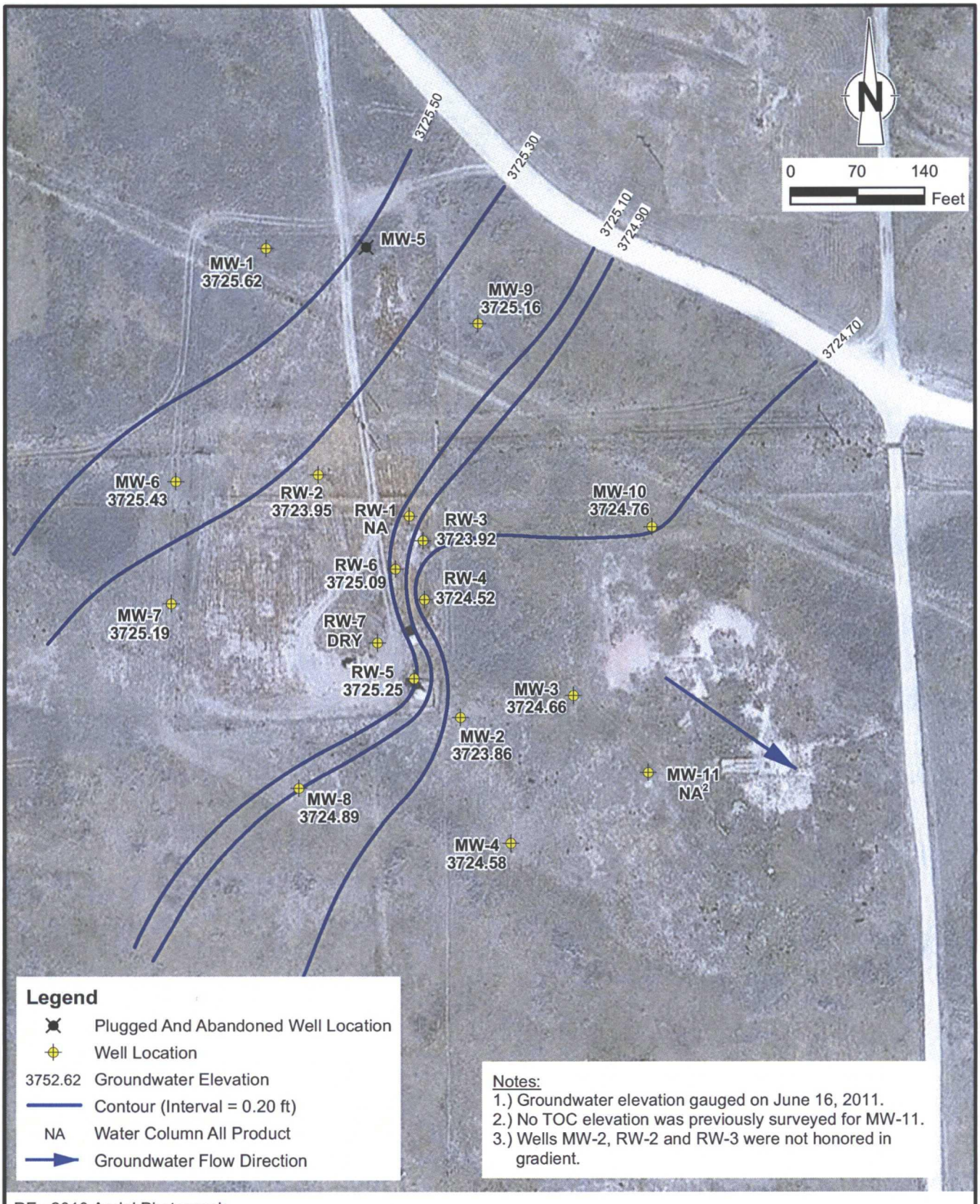
074685-11(002)PR-BR002 Apr 3/2012



RE: 2010 Aerial Photograph

figure 3
GROUNDWATER GRADIENT MAP - MARCH 2011
DARR ANGELL NO. 2
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

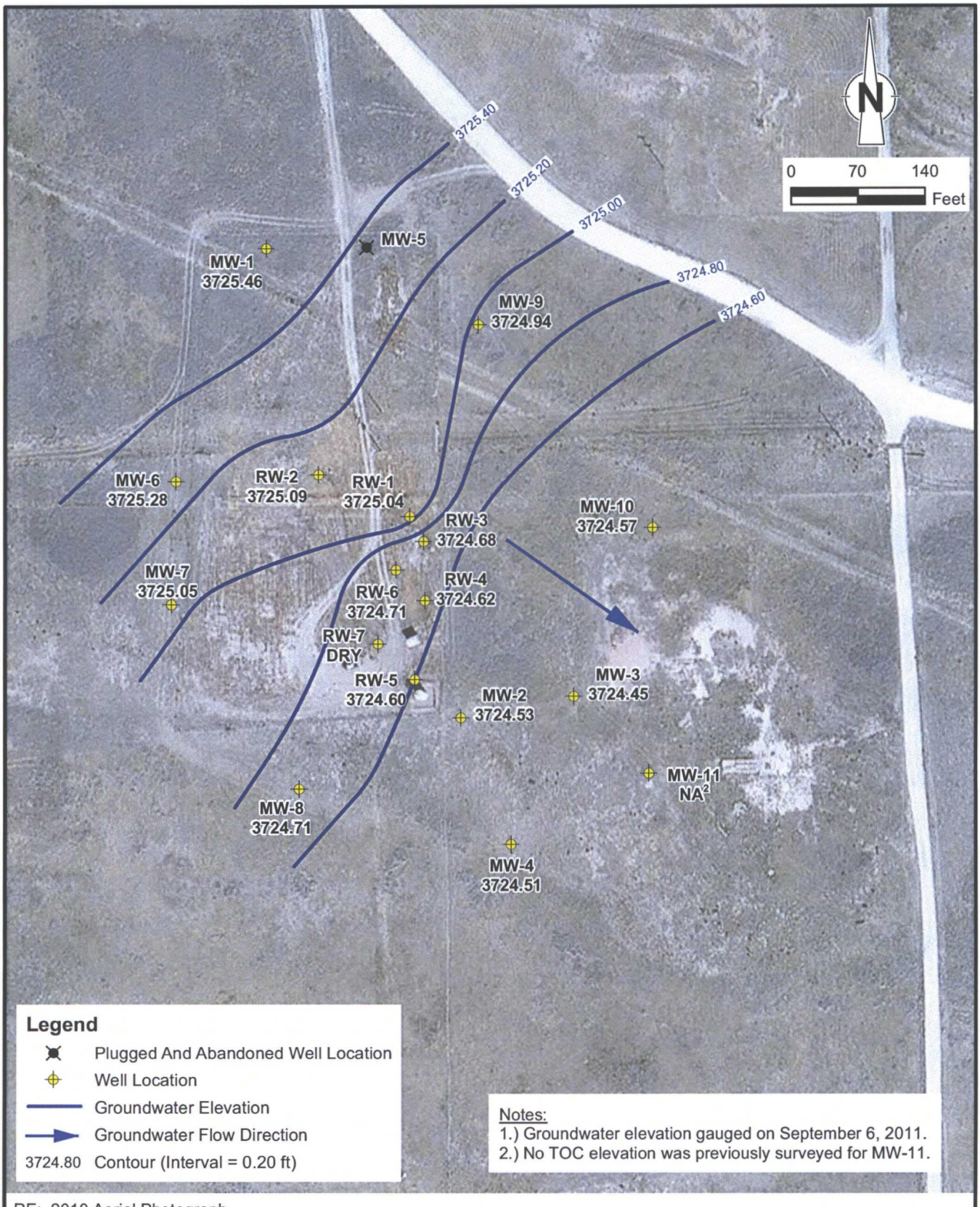
074685-11(002)PR-BR011 Apr 19/2012



RE: 2010 Aerial Photograph

figure 4
GROUNDWATER GRADIENT MAP - JUNE 2011
DARR ANGELL NO. 2
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

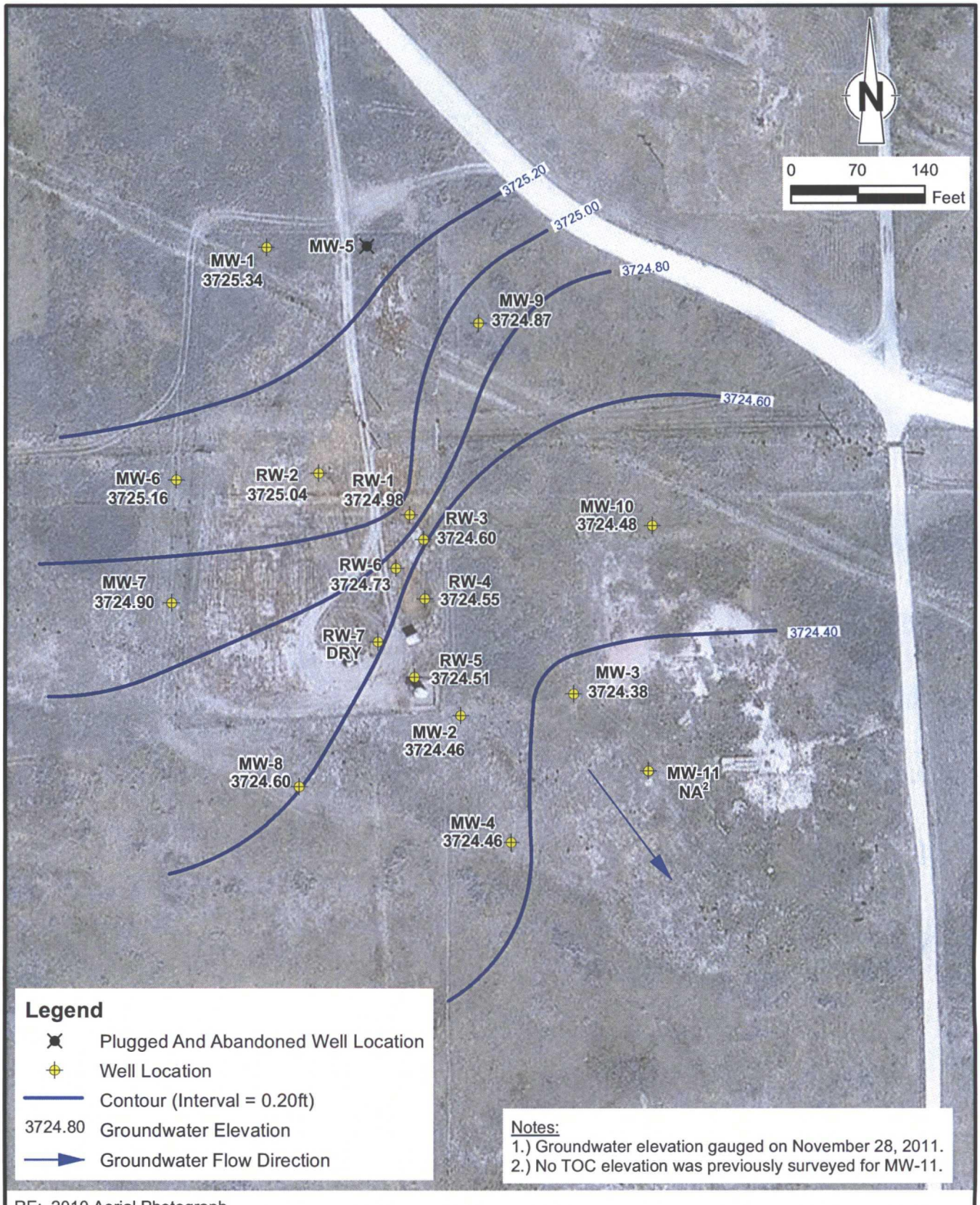
074685-11(002)PR-BR004 Apr 19/2012



RE: 2010 Aerial Photograph

figure 5
GROUNDWATER GRADIENT MAP - SEPTEMBER 2011
DARR ANGELL NO. 2
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

074685-11(002)PR-BR006 Apr 11/2012

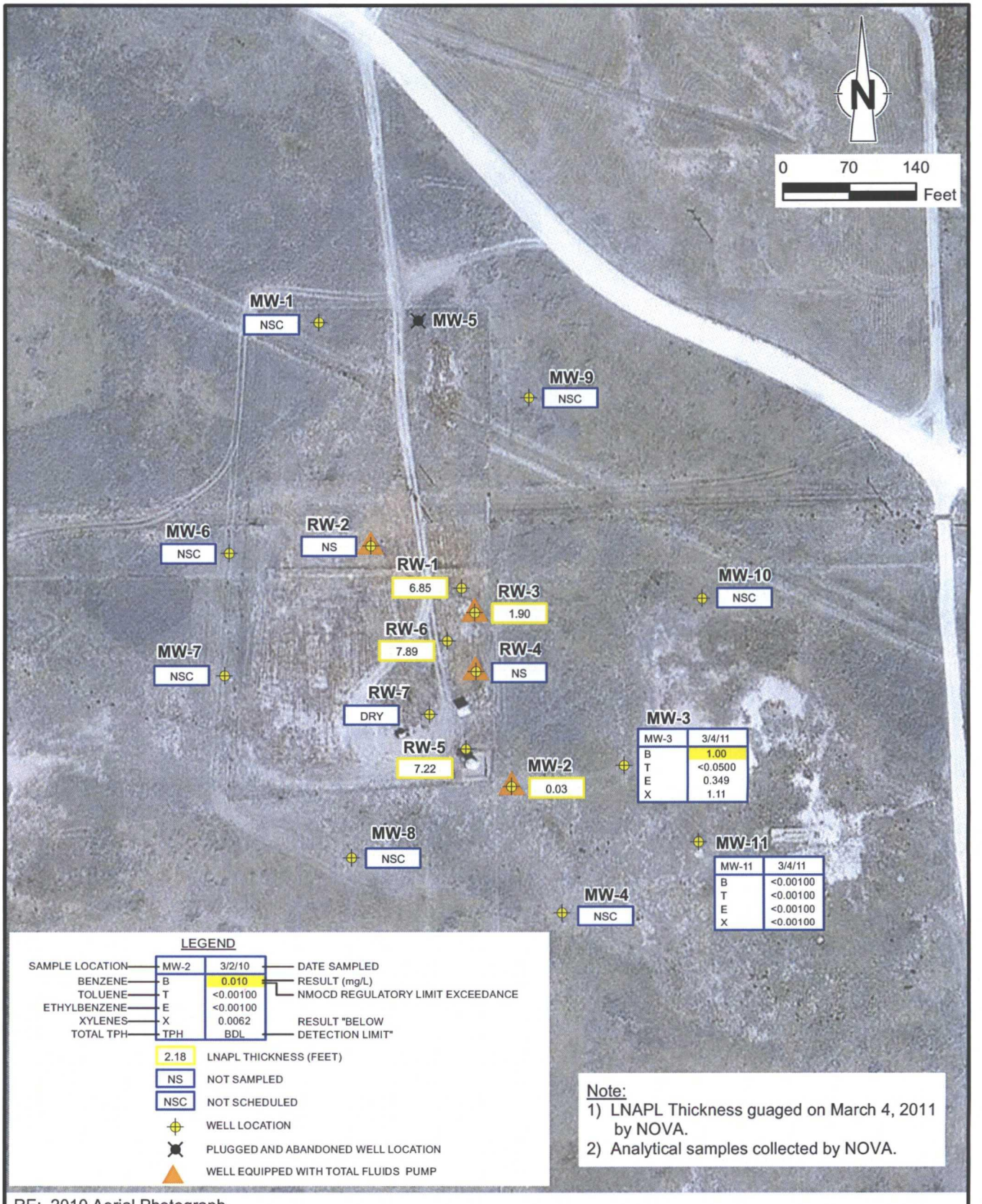


RE: 2010 Aerial Photograph

figure 6
GROUNDWATER GRADIENT MAP - NOVEMBER 2011
DARR ANGELL NO. 2
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

CRA

074685-11(002)PR-BR008 Apr 11/2012



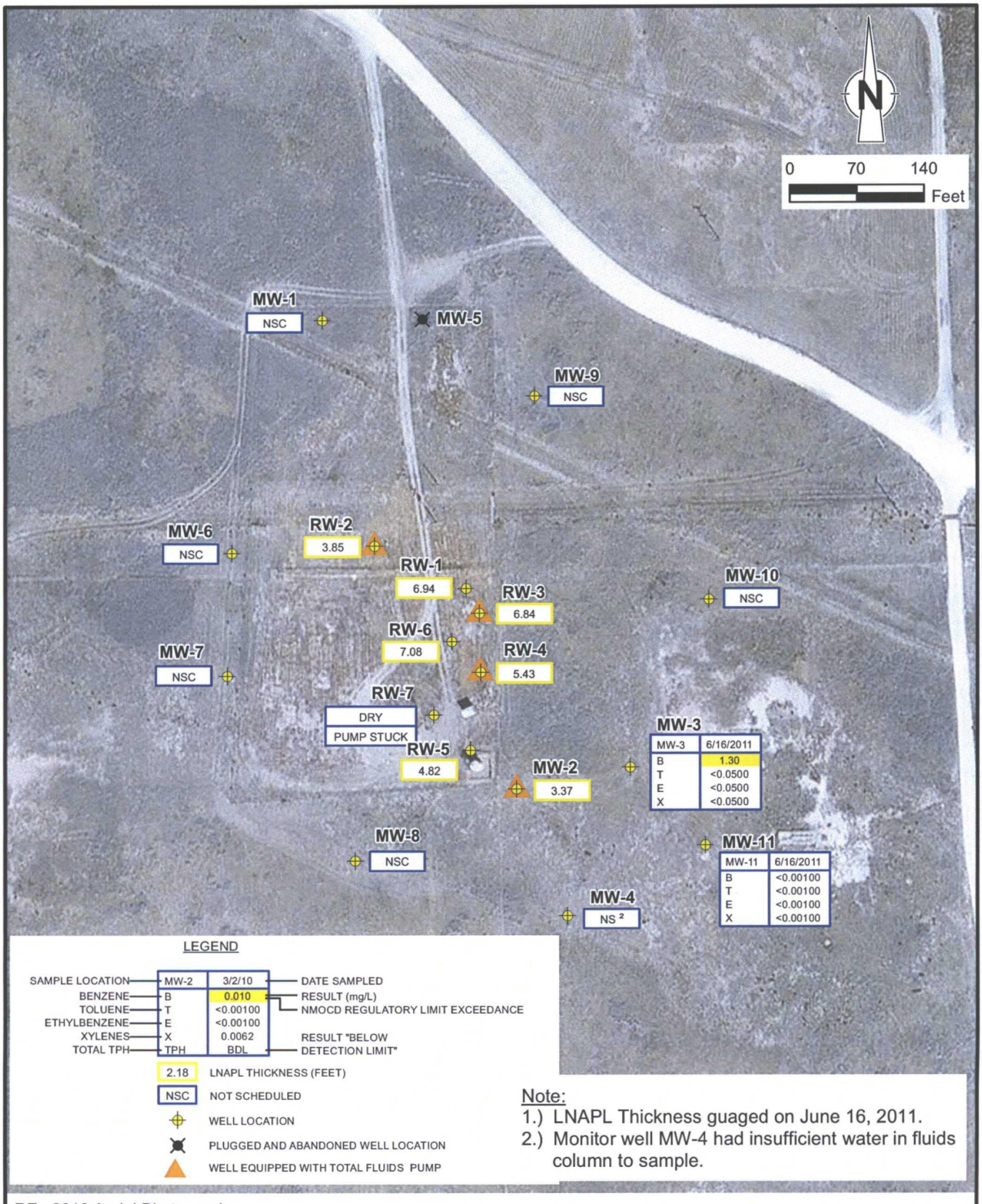
RE: 2010 Aerial Photograph

figure 7

GROUNDWATER BTEX CONCENTRATION MAP - MARCH 2011
DARR ANGELL NO. 2
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

CRA

074685-11(002)PR-BR010 Apr 19/2012



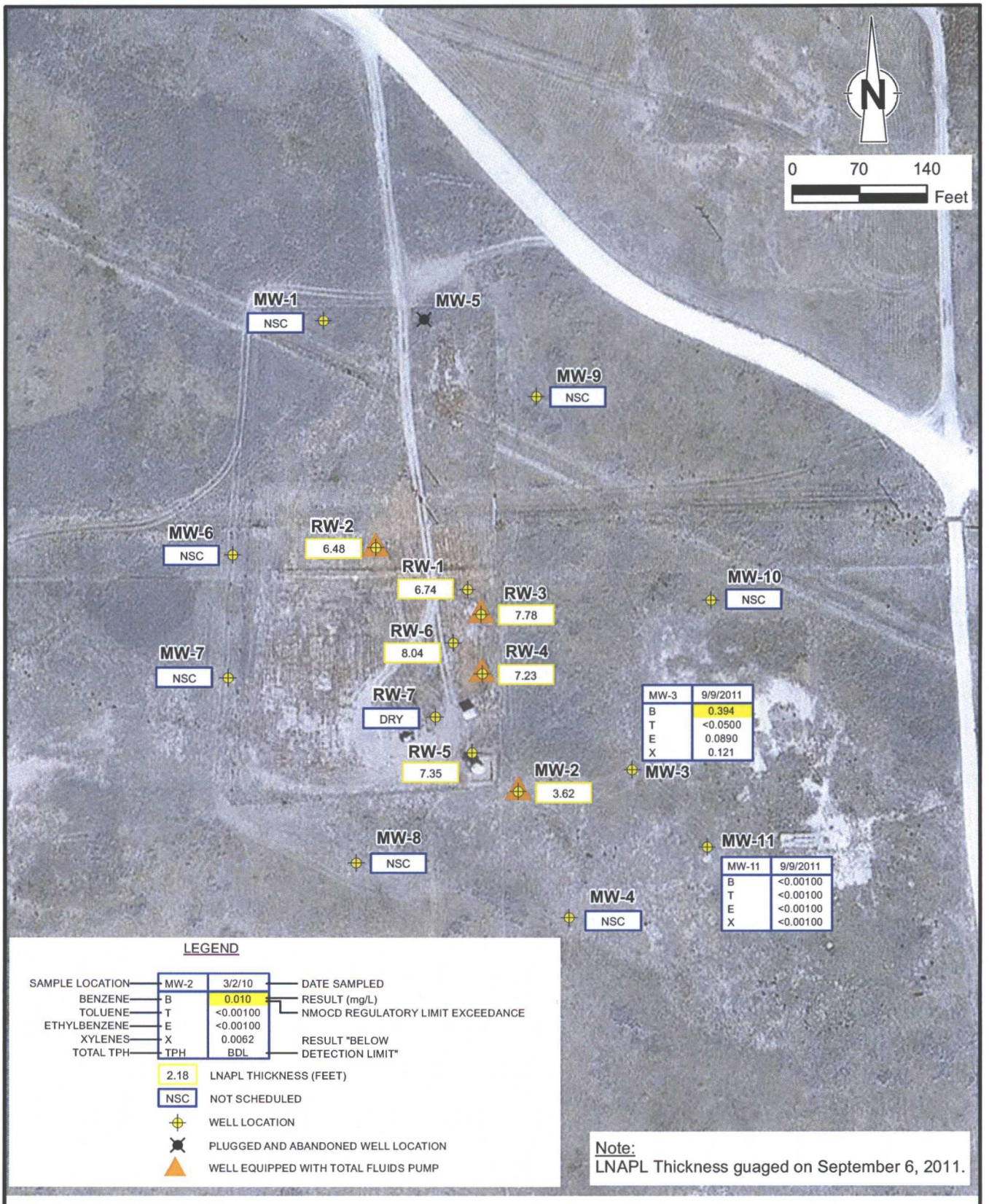
RE: 2010 Aerial Photograph

figure 8

GROUNDWATER BTEX CONCENTRATION MAP - JUNE 2011
DARR ANGELL NO. 2
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

CRA

074685-11(002)PR-BR003 Apr 19/2012

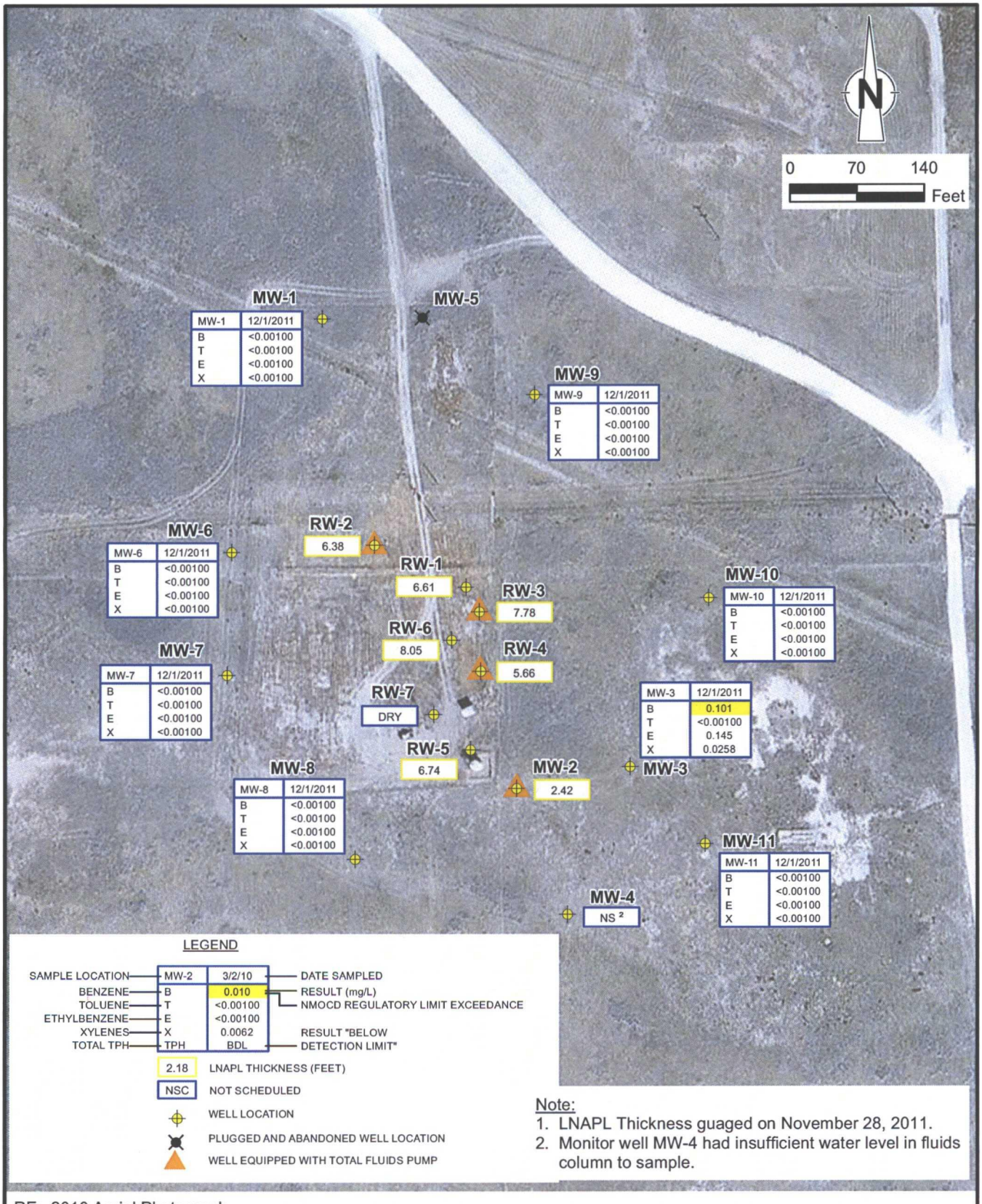


RE: 2010 Aerial Photograph

figure 9

GROUNDWATER BTEX CONCENTRATION MAP - SEPTEMBER 2011
DARR ANGELL NO. 2
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

074685-11(002)PR-BR005 Apr 19/2012



RE: 2010 Aerial Photograph

figure 10

GROUNDWATER BTEX CONCENTRATION MAP - DECEMBER 2011
DARR ANGELL NO. 2
LEA COUNTY, NEW MEXICO
Plains Pipeline L.P.

074685-11(002)PR-BR009 Apr 19/2012

TABLE I
GROUNDWATER GAUGING SUMMARY
PLAINS PIPELINE, L.P.
DARR ANGELL NO. 2
LEA COUNTY, NEW MEXICO

Well ID *TOC Elevation*	Collection Date	Depth to Groundwater (ft TOC)	Depth to LNAPL (ft TOC)	LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft)	Well Depth (ft TOC)	Well Screen Interval (ft bgs) *Well Size (in)*
MW-1	6/16/11	62.42	---	---	3725.62	68.01	40-65
3788.04	9/6/11	62.58	---	---	3725.46	69.31	2
	11/28/11	62.70	---	---	3725.34	68.09	
MW-2	6/16/11	67.28	63.91	3.37	3723.86	68.20	40-65
3788.41	9/6/11	66.81	63.19	3.62	3724.53	68.98	2
	11/28/11	65.91	63.49	2.42	3724.46	68.21	
MW-3	6/16/11	63.28	---	---	3724.66	67.70	40-65
3787.94	9/6/11	63.49	---	---	3724.45	68.07	2
	11/28/11	63.56	---	---	3724.38	67.71	
MW-4	6/16/11	63.18	---	---	3724.58	63.31	40-65
3787.76	9/6/11	63.25	---	---	3724.51	63.55	2
	11/28/11	63.30	---	---	3724.46	63.40	
MW-5	9/14/05	Plugged and Abandoned				---	46-66
MW-6	6/16/11	62.88	---	---	3725.43	68.77	42-62
3788.31	9/6/11	63.03	---	---	3725.28	69.85	2
	11/28/11	63.15	---	---	3725.16	68.84	
MW-7	6/16/11	63.46	---	---	3725.19	69.06	42-62
3788.65	9/6/11	63.60	---	---	3725.05	69.45	2
	11/28/11	63.75	---	---	3724.90	69.12	
MW-8	6/16/11	62.71	---	---	3724.89	69.29	42-62
3787.60	9/6/11	62.89	---	---	3724.71	70.01	2
	11/28/11	63.00	---	---	3724.60	69.37	
MW-9	6/16/11	62.11	---	---	3725.16	68.97	47-67
3787.27	9/6/11	62.33	---	---	3724.94	69.61	2
	11/28/11	62.40	---	---	3724.87	69.23	
MW-10	6/16/11	62.74	---	---	3724.76	68.11	47-67
3787.50	9/6/11	62.93	---	---	3724.57	68.57	2
	11/28/11	63.02	---	---	3724.48	68.12	
MW-11	6/16/11	63.88	---	---	---	69.17	45-65
	9/6/11	64.08	---	---	---	69.65	2
	11/28/11	64.13	---	---	---	69.19	
RW-1	6/16/11	---	60.95	6.94	NA*	67.89	40-65
3787.45	9/6/11	67.87	61.13	6.74	3725.04	68.03	4
	11/28/11	67.82	61.21	6.61	3724.98	67.92	

TABLE I
GROUNDWATER GAUGING SUMMARY
PLAINS PIPELINE, L.P.
DARR ANGELL NO. 2
LEA COUNTY, NEW MEXICO

Well ID *TOC Elevation*	Collection Date	Depth to Groundwater (ft TOC)	Depth to LNAPL (ft TOC)	LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft)	Well Depth (ft TOC)	Well Screen Interval (ft bgs) *Well Size (in)*
RW-2	6/16/11	67.00	63.15	3.85	3723.95	68.25	40-65
3787.83	9/6/11	67.99	61.51	6.48	3725.09	68.87	*4*
	11/28/11	67.96	61.58	6.38	3725.04	68.35	
RW-3	6/16/11	69.43	62.59	6.84	3723.92	71.20	48-68
3787.81	9/6/11	69.43	61.65	7.78	3724.68	72.59	*4*
	11/28/11	69.51	61.72	7.78	3724.60	71.30	
RW-4	6/16/11	67.62	62.19	5.43	3724.52	72.18	49-69
3787.74	9/6/11	68.98	61.75	7.23	3724.62	72.31	*4*
	11/28/11	67.77	62.11	5.66	3724.55	72.24	
RW-5	6/16/11	66.03	61.21	4.82	3725.25	71.74	48-68
3787.38	9/6/11	68.73	61.38	7.35	3724.60	72.81	*4*
	11/28/11	68.33	61.59	6.74	3724.51	71.79	
RW-6	6/16/11	67.86	60.78	7.08	3725.09	71.81	49-69
3787.22	9/6/11	69.02	60.98	8.04	3724.71	72.08	*4*
	11/28/11	69.01	60.96	8.05	3724.73	72.09	
RW-7	6/16/11	DRY				60.20	48-68
3787.40	9/6/11	DRY				60.98	*4*
	11/28/11	DRY				60.98	

Notes:

1. TOC - Top of Casing.
2. LNAPL - Light non-aqueous phase liquid.
3. bgs - below ground surface.
4. Corrected groundwater elevations were calculated using an LNAPL specific gravity of 0.81.
5. NA - Total fluids column was product.

TABLE II
GROUNDWATER BTEX ANALYTICAL SUMMARY
PLAINS PIPELINE, L.P.
DARR ANGELL NO. 2
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Total BTEX
New Mexico Oil Conservation Division Regulatory Limits						
		0.01	0.75	0.75	0.62	0.05
MW-1	12/1/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-3	3/4/11	**1.00**	<0.0500	**0.349**	**1.11**	**1.30**
	6/16/11	**1.30**	<0.0500	<0.0500	<0.0500	**1.30**
	9/9/11	**0.410**	<0.00100	**0.0839**	**0.0700**	**0.564**
	12/1/11	**0.101**	<0.00100	**0.145**	**0.0258**	**0.272**
MW-6	12/1/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-7	12/1/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-8	12/1/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-9	12/1/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-10	12/1/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-11	3/4/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	6/16/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	9/9/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	12/1/11	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

Notes:

1. Shaded cells indicate New Mexico Oil Conservation Division Regulatory Limit exceedance.
2. **Bold** indicates detection.
3. BTEX analyses by EPA Method 8021B.
4. Results shown in mg/L.
5. March 2011 results collected by NOVA.

TABLE III
GROUNDWATER PAH ANALYTICAL SUMMARY
PLAINS PIPELINE, L.P.
DARR ANGELL NO. 2
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Acenaphthlene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	Napthalene	1-Methylnapthalene	2-Methylnapthalene	Dibenzofuran
		NMWQCC Drinking Water Standards Section 1-101.UU and 3-103.A																		
					0.001	0.007	0.002		0.002	0.002	0.003			0.004				0.03		
MW-1	12/1/08	<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
	11/30/09	<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
	11/24/10	Not sampled as part of Quarterly Monitoring Event																		
MW-2	12/1/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	0.178	<0.000183	0.230	<0.000183	**0.704**	**1.68**	**2.31**	0.130
	11/30/09	<0.0229	<0.0229	<0.0229	<0.0229	<0.0229	<0.0229	<0.0229	<0.0229	<0.0229	<0.0229	<0.0229	0.755	<0.0229	1.04	<0.0229	**2.89**	**7.25**	**9.78**	0.524
	11/24/10	Not Sampled Due to Presence of PSH																		
MW-3	12/1/08	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	0.00126	<0.000183	0.00103	<0.000183	**0.0426**	0.0260	<0.000183	0.0014
	11/30/09	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	0.00155	<0.000184	0.00134	<0.000184	**0.0238**	**0.0306**	<0.000184	0.00145
	11/24/10	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	<0.000184	0.00132	<0.000184	0.00112	<0.000184	<0.000184	0.0234	<0.000184	0.00133
	12/1/11	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	<0.000183	**0.00140**	<0.000183	**0.00135**	<0.000183	**0.00893**	**0.0191**	<0.000183	**0.00163**
MW-4	12/1/08	Not sampled due to insufficient water volume																		
	11/30/09	<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	**0.00118**	<0.000184	<0.000184	<0.000184
	11/24/10	Not sampled as part of Quarterly Monitoring Event																		
MW-6	12/1/08	<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
	11/30/09	<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
	11/24/10	Not sampled as part of Quarterly Monitoring Event																		
MW-7	12/1/08	<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
	11/30/09	<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
	11/24/10	Not sampled as part of Quarterly Monitoring Event																		
MW-8	12/1/08	<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
	11/30/09	<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
	11/24/10	Not sampled as part of Quarterly Monitoring Event																		
MW-9	12/1/08	<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
	11/30/09	<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
	11/24/10	Not sampled as part of Quarterly Monitoring Event																		
MW-10	12/1/08	<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
	11/30/09	<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
	11/24/10	Not sampled as part of Quarterly Monitoring Event																		
MW-11	12/1/08	<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
	11/30/09	<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
	11/24/10	Not sampled as part of Quarterly Monitoring Event																		

TABLE III
GROUNDWATER PAH ANALYTICAL SUMMARY
PLAINS PIPELINE, L.P.
DARR ANGELL NO. 2
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Acenaphthlene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	Napthalene	1-Methylnapthalene	2-Methylnapthalene	Dibenzofuran
NMWQCC Drinking Water Standards Section 1-101.UU and 3-103.A					0.001	0.007	0.002		0.002	0.002	0.003			0.004				0.03		
RW-1	12/1/08	<0.00459	<0.00459	<0.00459	<0.00459	<0.00459	<0.00459	<0.00459	<0.00459	<0.00459	<0.00459	<0.00459	0.274	<0.00459	0.346	<0.00459	**1.01**	**2.42**	**3.20**	0.208
	11/30/09	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	0.0117	<0.000922	0.0134	<0.000922	**0.102**	**0.118**	**0.154**	0.00842
	11/24/10	Not sampled due to presence of PSH.																		
RW-2	12/1/08	<0.00184	<0.00184	<0.00184	<0.00184	<0.00184	<0.00184	<0.00184	<0.00184	<0.00184	<0.00184	<0.00184	0.0507	<0.00184	0.0569	<0.00184	**0.224**	**0.410**	**0.526**	0.0350
	11/30/09	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	0.0254	<0.000922	0.0322	<0.000922	**0.157**	**0.266**	**0.347**	0.0178
	11/24/10	Not sampled due to presence of PSH.																		
RW-3	12/2/08	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	0.0447	<0.000922	0.0523	<0.000922	**0.203**	**0.362**	**0.480**	0.0309
	11/30/09	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	0.0114	<0.000922	0.0132	<0.000922	**0.113**	**0.128**	**0.164**	0.0101
	11/24/10	Not sampled due to presence of PSH.																		
RW-4	12/2/08	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	0.173	<0.00183	0.216	<0.00183	**0.637**	**1.58**	**2.14**	0.122
	11/30/09	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	0.0263	<0.000922	0.0337	<0.000922	**0.169**	**0.276**	**0.367**	0.0184
	11/24/10	Not sampled due to presence of PSH.																		
RW-5	12/1/08	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	0.0938	<0.000922	0.117	<0.000922	**0.283**	**0.835**	**0.910**	0.0654
	11/30/09	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	0.0201	<0.000922	0.0284	<0.000922	**0.147**	**0.217**	**0.295**	0.0155
	11/24/10	Not sampled due to presence of PSH.																		
RW-6	12/2/08	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	<0.00183	0.188	<0.00183	0.244	<0.00183	**0.693**	**1.77**	**2.44**	0.138
	11/30/09	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	<0.000922	0.0352	<0.000922	0.0492	<0.000922	**0.20**	**0.36**	**0.481**	0.0253
	11/24/10	Not sampled due to presence of PSH.																		
RW-7	12/2/08	Not sampled due to insufficient water volume																		
	11/30/09	Not sampled due to insufficient water volume																		
	11/24/10	Not sampled due to presence of PSH.																		

Notes:

1. Shaded cells indicate New Mexico Oil Conservation Division Regulatory Limit exceedance.
2. BTEX analyses by EPA Method 8021B.
5. Results shown in mg/L.
6. **Bold** indicates detection.
7. 2008 through 2010 samples collected by NOVA.

TABLE 1

GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.
DARR ANGELL #2
LEA COUNTY, NEW MEXICO
NMOCD REFERENCE NUMBER AP-007

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUND WATER ELEVATION
MW - 1	*03/04/11*	3788.04	-	61.68	0.00	3726.36
MW - 2	03/01/11	3788.41	64.15	64.17	0.02	3724.26
MW - 2	*03/04/11*	3788.41	64.17	64.20	0.03	3724.24
MW - 3	03/01/11	3787.94	-	63.12	0.00	3724.82
MW - 3	*03/04/11*	3787.94	-	63.14	0.00	3724.80
MW - 3	03/08/11	3787.94	sheen	63.15	0.00	3724.79
MW - 3	03/14/11	3787.94	sheen	63.16	0.00	3724.78
MW - 3	03/16/11	3787.94	sheen	61.19	0.00	3726.75
MW - 3	03/21/11	3787.94	sheen	63.14	0.00	3724.80
MW - 3	03/24/11	3787.94	sheen	63.13	0.00	3724.81
MW - 3	03/28/11	3787.94	sheen	63.15	0.00	3724.79
MW - 3	03/30/11	3787.94	sheen	63.14	0.00	3724.80
MW - 3	04/05/11	3787.94	sheen	63.13	0.00	3724.81
MW - 3	04/11/11	3787.94	sheen	63.15	0.00	3724.79
MW - 3	04/13/11	3787.94	sheen	63.13	0.00	3724.81
MW - 3	04/19/11	3787.94	sheen	63.09	0.00	3724.85
MW - 3	04/25/11	3787.94	sheen	63.04	0.00	3724.90
MW - 4	*11/24/10*	3787.76	**WELL IS DRY**			
MW - 5	09/14/05	PLUGGED & ABANDONED				
MW - 6	*03/04/11*	3788.31	-	62.13	0.00	3726.18
MW - 7	*03/04/11*	3788.65	-	62.78	0.00	3725.87
MW - 8	*03/04/11*	3787.60	-	62.00	0.00	3725.60
MW - 9	*03/04/11*	3787.27	-	61.37	0.00	3725.90
MW - 10	*03/04/11*	3787.50	-	62.02	0.00	3725.48
MW - 11	*03/03/11*		-	63.13	0.00	
RW - 1	01/05/11	3787.45	60.59	67.63	7.04	3725.80
RW - 1	01/11/11	3787.45	60.59	67.62	7.03	3725.81
RW - 1	01/17/11	3787.45	60.58	67.62	7.04	3725.81
RW - 1	03/01/11	3787.45	60.81	67.66	6.85	3725.61
RW - 1	*03/04/11*	3787.45	60.81	67.66	6.85	3725.61
RW - 1	03/08/11	3787.45	60.87	67.53	6.66	3725.58
RW - 1	03/14/11	3787.45	60.89	67.54	6.65	3725.56
RW - 1	03/16/11	3787.45	60.90	67.46	6.56	3725.57
RW - 1	03/21/11	3787.45	60.87	67.50	6.63	3725.59
RW - 1	03/24/11	3787.45	60.90	67.50	6.60	3725.56
RW - 1	03/28/11	3787.45	60.85	67.60	6.75	3725.59
RW - 1	03/30/11	3787.45	60.89	67.68	6.79	3725.54
RW - 1	04/05/11	3787.45	60.88	67.70	6.82	3725.55
RW - 1	04/11/11	3787.45	60.90	67.70	6.80	3725.53
RW - 1	04/13/11	3787.45	60.89	67.78	6.89	3725.53
RW - 1	04/19/11	3787.45	60.85	67.83	6.98	3725.55

TABLE 1

GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.
DARR ANGELL #2
LEA COUNTY, NEW MEXICO
NMOCD REFERENCE NUMBER AP-007

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUND WATER ELEVATION
RW - 1	04/25/11	3787.45	60.91	67.58	6.67	3725.54
RW - 2	03/01/11	3787.83	sheen	64.20	0.00	3723.63
RW - 2	*03/04/11*	3787.83	sheen	64.22	0.00	3723.61
RW - 3	03/01/11	3787.81	62.39	64.30	1.91	3725.13
RW - 3	*03/04/11*	3787.81	62.38	64.28	1.90	3725.15
RW - 4	03/01/11	3787.74	sheen	64.18	0.00	3723.56
RW - 4	*03/04/11*	3787.74	sheen	64.18	0.00	3723.56
RW - 5	01/05/11	3787.38	60.48	67.81	7.33	3725.80
RW - 5	01/11/11	3787.38	61.05	67.28	6.23	3725.40
RW - 5	01/17/11	3787.38	61.01	66.95	5.94	3725.48
RW - 5	03/01/11	3787.38	61.08	68.36	7.28	3725.21
RW - 5	*03/04/11*	3787.38	61.10	68.32	7.22	3725.20
RW - 5	03/08/11	3787.38	61.29	67.62	6.33	3725.14
RW - 5	03/14/11	3787.38	61.36	67.30	5.94	3725.13
RW - 5	03/16/11	3787.38	61.45	65.47	4.02	3725.33
RW - 5	03/21/11	3787.38	61.42	67.20	5.78	3725.09
RW - 5	03/24/11	3787.38	61.30	67.30	6.00	3725.18
RW - 5	03/28/11	3787.38	61.36	67.25	5.89	3725.14
RW - 5	03/30/11	3787.38	61.35	67.30	5.95	3725.14
RW - 5	04/05/11	3787.38	61.16	68.25	7.09	3725.16
RW - 5	04/11/11	3787.38	61.20	68.25	7.05	3725.12
RW - 5	04/13/11	3787.38	61.35	67.68	6.33	3725.08
RW - 5	04/19/11	3787.38	61.34	67.73	6.39	3725.08
RW - 5	04/25/11	3787.38	61.45	67.18	5.73	3725.07
RW - 6	01/05/11	3787.22	60.95	67.22	6.27	3725.33
RW - 6	01/11/11	3787.22	60.47	68.23	7.76	3725.59
RW - 6	01/17/11	3787.22	60.45	67.08	6.63	3725.78
RW - 6	03/01/11	3787.22	60.66	68.60	7.94	3725.37
RW - 6	*03/04/11*	3787.22	60.68	68.57	7.89	3725.36
RW - 6	03/08/11	3787.22	60.68	68.56	7.88	3725.36
RW - 6	03/14/11	3787.22	60.73	68.63	7.90	3725.31
RW - 6	03/16/11	3787.22	60.91	65.10	4.19	3725.68
RW - 6	03/21/11	3787.22	60.80	68.71	7.91	3725.23
RW - 6	03/24/11	3787.22	60.79	68.60	7.81	3725.26
RW - 6	03/28/11	3787.22	60.70	68.61	7.91	3725.33
RW - 6	03/30/11	3787.22	60.70	68.60	7.90	3725.34
RW - 6	04/05/11	3787.22	60.72	68.62	7.90	3725.32
RW - 6	04/11/11	3787.22	60.70	68.62	7.92	3725.33
RW - 6	04/13/11	3787.22	60.74	68.78	8.04	3725.27
RW - 6	04/19/11	3787.22	60.68	68.81	8.13	3725.32
RW - 6	04/25/11	3787.22	60.72	68.67	7.95	3725.31
RW - 7	01/05/11	3787.40	ND	ND	0.00	
RW - 7	01/11/11	3787.40	ND	ND	0.00	
RW - 7	01/17/11	3787.40	ND	ND	0.00	
RW - 7	03/01/11	3787.40	ND	ND	0.00	
RW - 7	*03/04/11*	3787.40	ND	ND	0.00	
RW - 7	03/08/11	3787.40	**WELL IS DRY**			

TABLE 1

GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.
DARR ANGELL #2
LEA COUNTY, NEW MEXICO
NMOCD REFERENCE NUMBER AP-007

WELL NUMBER	DATE MEASURED	TOP OF CASING ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUND WATER ELEVATION
RW - 7	03/14/11	3787.40	WELL IS DRY			
RW - 7	03/16/11	3787.40	WELL IS DRY			
RW - 7	03/21/11	3787.40	WELL IS DRY			
RW - 7	03/21/11	3787.40	WELL IS DRY			
RW - 7	04/05/11	3787.40	WELL IS DRY			
RW - 7	04/11/11	3787.40	WELL IS DRY			
RW - 7	04/13/11	3787.40	WELL IS DRY			
RW - 7	04/19/11	3787.40	WELL IS DRY			

TRACEANALYSIS, INC.

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5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 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

Jason Henry
Plains All American Houston

P.O. Box 4648
Houston, Tx, 77210-4648

Report Date: March 18, 2011

Work Order: 11030723

Project Location: NE of Lovington, NM
Project Name: Darr Angel #2
Project Number: LF-1999-62

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
259748	MW-11	water	2011-03-04	10:00	2011-03-04
259749	MW-3	water	2011-03-04	11:00	2011-03-04

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

Standard Flags

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

Case Narrative

Samples for project Darr Angel #2 were received by TraceAnalysis, Inc. on 2011-03-04 and assigned to work order 11030723. Samples for work order 11030723 were received intact without headspace and at a temperature of 3.3 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	67220	2011-03-11 at 14:52	79235	2011-03-12 at 03:58
BTEX	S 8021B	67448	2011-03-16 at 08:38	79493	2011-03-16 at 09:41

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 11030723 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: 259748 - MW-11

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	79235	Date Analyzed:	2011-03-12	Analyzed By:	ME
Prep Batch:	67220	Sample Preparation:	2011-03-11	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)		0.101	mg/L	1	0.100	101	67.8 - 126
4-Bromofluorobenzene (4-BFB)		0.112	mg/L	1	0.100	112	51.1 - 128

Sample: 259749 - MW-3

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	79493	Date Analyzed:	2011-03-16	Analyzed By:	ME
Prep Batch:	67448	Sample Preparation:	2011-03-16	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		**1.00**	mg/L	50	0.00100
Toluene		<0.0500	mg/L	50	0.00100
Ethylbenzene		**0.349**	mg/L	50	0.00100
Xylene		**1.11**	mg/L	50	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		5.62	mg/L	50	5.00	112	67.8 - 126
4-Bromofluorobenzene (4-BFB)		6.28	mg/L	50	5.00	126	51.1 - 128

Method Blank (1) QC Batch: 79235

QC Batch:	79235	Date Analyzed:	2011-03-12	Analyzed By:	ME
Prep Batch:	67220	QC Preparation:	2011-03-11	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)		0.0791	mg/L	1	0.100	79	70.2 - 118
4-Bromofluorobenzene (4-BFB)		0.0886	mg/L	1	0.100	89	47.3 - 116

Method Blank (1) QC Batch: 79493

QC Batch: 79493 | Date Analyzed: 2011-03-16 | Analyzed By: ME
Prep Batch: 67448 | QC Preparation: 2011-03-16 | 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)		0.0884	mg/L	1	0.100	88	70.2 - 118
4-Bromofluorobenzene (4-BFB)		0.0938	mg/L	1	0.100	94	47.3 - 116

Laboratory Control Spike (LCS-1)

QC Batch: 79235 | Date Analyzed: 2011-03-12 | Analyzed By: ME
Prep Batch: 67220 | QC Preparation: 2011-03-11 | Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	0.102	mg/L	1	0.100	<0.000400	102	76.8 - 110
Toluene	0.103	mg/L	1	0.100	<0.000300	103	81 - 108
Ethylbenzene	0.101	mg/L	1	0.100	<0.000300	101	78.8 - 118
Xylene	0.306	mg/L	1	0.300	<0.000333	102	80.3 - 119

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	0.102	mg/L	1	0.100	<0.000400	102	76.8 - 110	0	20
Toluene	0.102	mg/L	1	0.100	<0.000300	102	81 - 108	1	20
Ethylbenzene	0.102	mg/L	1	0.100	<0.000300	102	78.8 - 118	1	20
Xylene	0.306	mg/L	1	0.300	<0.000333	102	80.3 - 119	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)	0.0907	0.100	mg/L	1	0.100	91	100	66.6 - 114
4-Bromofluorobenzene (4-BFB)	0.105	0.113	mg/L	1	0.100	105	113	68.2 - 124

Laboratory Control Spike (LCS-1)

QC Batch: 79493 | Date Analyzed: 2011-03-16 | Analyzed By: ME
Prep Batch: 67448 | QC Preparation: 2011-03-16 | Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	0.0933	mg/L	1	0.100	<0.000400	93	76.8 - 110
Toluene	0.0988	mg/L	1	0.100	<0.000300	99	81 - 108
Ethylbenzene	0.114	mg/L	1	0.100	<0.000300	114	78.8 - 118
Xylene	0.348	mg/L	1	0.300	<0.000333	116	80.3 - 119

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	0.0935	mg/L	1	0.100	<0.000400	94	76.8 - 110	0	20
Toluene	0.0992	mg/L	1	0.100	<0.000300	99	81 - 108	0	20
Ethylbenzene	0.113	mg/L	1	0.100	<0.000300	113	78.8 - 118	1	20
Xylene	0.349	mg/L	1	0.300	<0.000333	116	80.3 - 119	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)	0.0984	0.0899	mg/L	1	0.100	98	90	66.6 - 114
4-Bromofluorobenzene (4-BFB)	0.110	0.108	mg/L	1	0.100	110	108	68.2 - 124

Matrix Spike (MS-1) Spiked Sample: 259747

QC Batch: 79235 | Date Analyzed: 2011-03-12 | Analyzed By: ME
Prep Batch: 67220 | QC Preparation: 2011-03-11 | Prepared By: ME

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.80	mg/L	10	1.00	0.8487	95	77.9 - 114
Toluene	0.948	mg/L	10	1.00	<0.00300	95	78.3 - 111
Ethylbenzene	0.916	mg/L	10	1.00	<0.00300	92	75.3 - 110
Xylene	2.73	mg/L	10	3.00	0.1985	84	75.7 - 109

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	1.82	mg/L	10	1.00	0.8487	97	77.9 - 114	1	20
Toluene	0.972	mg/L	10	1.00	<0.00300	97	78.3 - 111	2	20
Ethylbenzene	0.949	mg/L	10	1.00	<0.00300	95	75.3 - 110	4	20
Xylene	2.83	mg/L	10	3.00	0.1985	88	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)	0.927	0.886	mg/L	10	1	93	89	68.3 - 107
4-Bromofluorobenzene (4-BFB)	0.937	0.898	mg/L	10	1	94	90	60.1 - 135

Matrix Spike (MS-1) Spiked Sample: 260125

QC Batch: 79493 | Date Analyzed: 2011-03-16 | Analyzed By: ME
Prep Batch: 67448 | QC Preparation: 2011-03-16 | Prepared By: ME

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	[1]	7.49	mg/L	10	1.00	5.9335	156	77.9 - 114
Toluene		1.10	mg/L	10	1.00	<0.00300	110	78.3 - 111
Ethylbenzene	[2]	1.78	mg/L	10	1.00	0.5615	122	75.3 - 110
Xylene	[3]	3.72	mg/L	10	3.00	0.2456	116	75.7 - 109

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	[4]	7.18	mg/L	10	1.00	5.9335	125	77.9 - 114	4	20
Toluene		0.915	mg/L	10	1.00	<0.00300	92	78.3 - 111	18	20
Ethylbenzene		1.61	mg/L	10	1.00	0.5615	105	75.3 - 110	10	20
Xylene		3.22	mg/L	10	3.00	0.2456	99	75.7 - 109	14	20

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

[1]Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control. - SPECIAL - SAMPLE NUMBER 260125 WA USED FOR MS/MSD
[2]Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.
[3]Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.
[4]Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

Surrogate		MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	[5]	1.08	1.01	mg/L	10	1	108	101	68.3 - 107
4-Bromofluorobenzene (4-BFB)		1.31	1.20	mg/L	10	1	131	120	60.1 - 135

Standard (CCV-1)

QC Batch: 79235 Date Analyzed: 2011-03-12 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	0.104	104	80 - 120	2011-03-12
Toluene		mg/L	0.100	0.104	104	80 - 120	2011-03-12
Ethylbenzene		mg/L	0.100	0.103	103	80 - 120	2011-03-12
Xylene		mg/L	0.300	0.312	104	80 - 120	2011-03-12

Standard (CCV-2)

QC Batch: 79235 Date Analyzed: 2011-03-12 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	0.100	100	80 - 120	2011-03-12
Toluene		mg/L	0.100	0.0982	98	80 - 120	2011-03-12
Ethylbenzene		mg/L	0.100	0.0932	93	80 - 120	2011-03-12
Xylene		mg/L	0.300	0.279	93	80 - 120	2011-03-12

Standard (CCV-1)

QC Batch: 79493 Date Analyzed: 2011-03-16 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	0.0962	96	80 - 120	2011-03-16
Toluene		mg/L	0.100	0.0977	98	80 - 120	2011-03-16
Ethylbenzene		mg/L	0.100	0.0966	97	80 - 120	2011-03-16
Xylene		mg/L	0.300	0.294	98	80 - 120	2011-03-16

Standard (CCV-2)

QC Batch: 79493 Date Analyzed: 2011-03-16 Analyzed By: ME

[5]High surrogate recovery due to peak interference.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0971	97	80 - 120	2011-03-16
Toluene		mg/L	0.100	0.103	103	80 - 120	2011-03-16
Ethylbenzene		mg/L	0.100	0.118	118	80 - 120	2011-03-16
Xylene		mg/L	0.300	0.358	119	80 - 120	2011-03-16

LAB Order ID 1103072 3

Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

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

Company Name: WWG
Phone #: 432-520-7720
Address: (Street, City, Zip) 2057 Commerce Midland TX 79705
Fax #: 432-520-7701
Contact Person: Ron E
E-mail:
Invoice to: (If different from above)
Project #: LF-1999-62
Project Name: Darr #2
Project Location (including state): New Mexico
Sampler Signature:

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, Fl, S04, NO3, NO2, Alkalinity	Na, Ca, Mg, K, TDS, EC					Turn Around Time if different from standard	Hold
259748	MW-11	3	40a	X				X				X		3-4	10:00		X																						
749	MW-3	↓	↓	↓				↓				↓		↓	11:00		↓																								

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	WWG	3-4	4:15		Trace	3/4/11	16:15	INST OBS 33 °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

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

Carrier #

ORIGINAL COPY

Summary Report

Todd Wells
CRA-Midland
2135 South Loop 250 West
Midland, TX 79703

Report Date: June 27, 2011

Work Order: 11061713

Project Location: Lea Co., NM
Project Name: Darr Angell #2
Project Number: 074685
SRS#: LF 1999-62

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
269704	Dup-3 061611	water	2011-06-16	00:00	2011-06-17
269705	MW-11 061611	water	2011-06-16	09:00	2011-06-17
269706	MW-3 061611	water	2011-06-16	09:15	2011-06-17

	BTEX			
Sample - Field Code	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)
269704 - Dup-3 061611	<0.00100	<0.00100	<0.00100	<0.00100
269705 - MW-11 061611	<0.00100	<0.00100	<0.00100	<0.00100
269706 - MW-3 061611	**1.30**	<0.0500	<0.0500	<0.0500

TRACEANALYSIS, INC.

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6015 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

Todd Wells
CRA-Midland
2135 South Loop 250 West
Midland, TX, 79703

Report Date: June 27, 2011

Work Order: 11061713

Project Location: Lea Co., NM
Project Name: Darr Angell #2
Project Number: 074685
SRS#: LF 1999-62

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
269704	Dup-3 061611	water	2011-06-16	00:00	2011-06-17
269705	MW-11 061611	water	2011-06-16	09:00	2011-06-17
269706	MW-3 061611	water	2011-06-16	09:15	2011-06-17

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 Darr Angell #2 were received by TraceAnalysis, Inc. on 2011-06-17 and assigned to work order 11061713. Samples for work order 11061713 were received intact without headspace and at a temperature of 3.7 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	69993	2011-06-22 at 08:33	82424	2011-06-22 at 08:33
BTEX	S 8021B	70083	2011-06-24 at 15:14	82512	2011-06-24 at 18:30

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 11061713 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: 269704 - Dup-3 061611

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	82512	Date Analyzed:	2011-06-24	Analyzed By:	ME
Prep Batch:	70083	Sample Preparation:	2011-06-24	Prepared By:	ME

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0870	mg/L	1	0.100	87	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.0834	mg/L	1	0.100	83	51.1 - 128

Sample: 269705 - MW-11 061611

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	82424	Date Analyzed:	2011-06-22	Analyzed By:	ME
Prep Batch:	69993	Sample Preparation:	2011-06-22	Prepared By:	ME

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0955	mg/L	1	0.100	96	67.8 - 129
4-Bromofluorobenzene (4-BFB)			0.0867	mg/L	1	0.100	87	51.1 - 128

Sample: 269706 - MW-3 061611

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	82424	Date Analyzed:	2011-06-22	Analyzed By:	ME
Prep Batch:	69993	Sample Preparation:	2011-06-22	Prepared By:	ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**1.30**	mg/L	50	0.00100
Toluene		1	<0.0500	mg/L	50	0.00100
Ethylbenzene		1	<0.0500	mg/L	50	0.00100
Xylene		1	<0.0500	mg/L	50	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			4.38	mg/L	50	5.00	88	67.8 - 129
4-Bromofluorobenzene (4-BFB)			3.98	mg/L	50	5.00	80	51.1 - 128

Method Blanks

Method Blank (1) QC Batch: 82424

QC Batch: 82424 | Date Analyzed: 2011-06-22 | Analyzed By: ME
Prep Batch: 69993 | QC Preparation: 2011-06-22 | Prepared By: ME

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000400	mg/L	0.001
Toluene		1	<0.000300	mg/L	0.001
Ethylbenzene		1	<0.000300	mg/L	0.001
Xylene		1	<0.000333	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0898	mg/L	1	0.100	90	70.2 - 118
4-Bromofluorobenzene (4-BFB)			0.0782	mg/L	1	0.100	78	47.3 - 116

Method Blank (1) QC Batch: 82512

QC Batch: 82512 | Date Analyzed: 2011-06-24 | Analyzed By: ME
Prep Batch: 70083 | QC Preparation: 2011-06-24 | Prepared By: ME

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000400	mg/L	0.001
Toluene		1	<0.000300	mg/L	0.001
Ethylbenzene		1	<0.000300	mg/L	0.001
Xylene		1	<0.000333	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0820	mg/L	1	0.100	82	70.2 - 118
4-Bromofluorobenzene (4-BFB)			0.0778	mg/L	1	0.100	78	47.3 - 116

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 82424 | Date Analyzed: 2011-06-22 | Analyzed By: ME
Prep Batch: 69993 | QC Preparation: 2011-06-22 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0999	mg/L	1	0.100	<0.000400	100	76.8 - 110
Toluene		1	0.107	mg/L	1	0.100	<0.000300	107	81 - 118
Ethylbenzene		1	0.0906	mg/L	1	0.100	<0.000300	91	78.8 - 118
Xylene		1	0.270	mg/L	1	0.300	<0.000333	90	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	0.106	mg/L	1	0.100	<0.000400	106	76.8 - 110	6	20
Toluene		1	0.115	mg/L	1	0.100	<0.000300	115	81 - 118	7	20
Ethylbenzene		1	0.0981	mg/L	1	0.100	<0.000300	98	78.8 - 118	8	20
Xylene		1	0.292	mg/L	1	0.300	<0.000333	97	80.3 - 119	8	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)	0.0918	0.0901	mg/L	1	0.100	92	90	66.6 - 114
4-Bromofluorobenzene (4-BFB)	0.0877	0.0873	mg/L	1	0.100	88	87	68.2 - 124

Laboratory Control Spike (LCS-1)

QC Batch: 82512 | Date Analyzed: 2011-06-24 | Analyzed By: ME
Prep Batch: 70083 | QC Preparation: 2011-06-24 | Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.106	mg/L	1	0.100	<0.000400	106	76.8 - 110
Toluene		1	0.110	mg/L	1	0.100	<0.000300	110	81 - 118
Ethylbenzene		1	0.0926	mg/L	1	0.100	<0.000300	93	78.8 - 118
Xylene		1	0.277	mg/L	1	0.300	<0.000333	92	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	0.108	mg/L	1	0.100	<0.000400	108	76.8 - 110	2	20
Toluene		1	0.112	mg/L	1	0.100	<0.000300	112	81 - 118	2	20
Ethylbenzene		1	0.0938	mg/L	1	0.100	<0.000300	94	78.8 - 118	1	20
Xylene		1	0.281	mg/L	1	0.300	<0.000333	94	80.3 - 119	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0858	0.0830	mg/L	1	0.100	86	83	66.6 - 114
4-Bromofluorobenzene (4-BFB)	0.0898	0.0860	mg/L	1	0.100	90	86	68.2 - 124

Matrix Spike (MS-1) Spiked Sample: 269706

QC Batch: 82424 | Date Analyzed: 2011-06-22 | Analyzed By: ME
Prep Batch: 69993 | QC Preparation: 2011-06-22 | Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	6.05	mg/L	50	5.00	1.3048	95	77.9 - 114
Toluene		1	5.43	mg/L	50	5.00	<0.0150	109	78.3 - 111
Ethylbenzene		1	4.55	mg/L	50	5.00	<0.0150	91	75.3 - 110
Xylene		1	13.7	mg/L	50	15.0	<0.0166	91	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	6.00	mg/L	50	5.00	1.3048	94	77.9 - 114	1	20
Toluene		1	5.42	mg/L	50	5.00	<0.0150	108	78.3 - 111	0	20
Ethylbenzene		1	4.68	mg/L	50	5.00	<0.0150	94	75.3 - 110	3	20
Xylene		1	13.9	mg/L	50	15.0	<0.0166	93	75.7 - 109	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)	4.52	4.35	mg/L	50	5	90	87	68.3 - 107
4-Bromofluorobenzene (4-BFB)	4.46	4.22	mg/L	50	5	89	84	60.1 - 135

Matrix Spike (MS-1) Spiked Sample: 269869

QC Batch: 82512 | Date Analyzed: 2011-06-24 | Analyzed By: ME
Prep Batch: 70083 | QC Preparation: 2011-06-24 | Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	24.5	mg/L	100	10.0	15.0602	94	77.9 - 114
Toluene		1	10.8	mg/L	100	10.0	<0.0300	108	78.3 - 111
Ethylbenzene		1	9.03	mg/L	100	10.0	0.7019	83	75.3 - 110
Xylene		1	26.4	mg/L	100	30.0	<0.0333	88	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	24.6	mg/L	100	10.0	15.0602	95	77.9 - 114	0	20
Toluene		1	10.9	mg/L	100	10.0	<0.0300	109	78.3 - 111	1	20
Ethylbenzene		1	9.07	mg/L	100	10.0	0.7019	84	75.3 - 110	0	20
Xylene		1	26.5	mg/L	100	30.0	<0.0333	88	75.7 - 109	0	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)	7.80	8.31	mg/L	100	10	78	83	68.3 - 107
4-Bromofluorobenzene (4-BFB)	7.89	8.22	mg/L	100	10	79	82	60.1 - 135

Calibration Standards

Standard (CCV-2)

QC Batch: 82424 | Date Analyzed: 2011-06-22 | 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	0.108	108	80 - 120	2011-06-22
Toluene		1	mg/L	0.100	0.114	114	80 - 120	2011-06-22
Ethylbenzene		1	mg/L	0.100	0.0958	96	80 - 120	2011-06-22
Xylene		1	mg/L	0.300	0.287	96	80 - 120	2011-06-22

Standard (CCV-3)

QC Batch: 82424 | Date Analyzed: 2011-06-22 | 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	0.105	105	80 - 120	2011-06-22
Toluene		1	mg/L	0.100	0.112	112	80 - 120	2011-06-22
Ethylbenzene		1	mg/L	0.100	0.0950	95	80 - 120	2011-06-22
Xylene		1	mg/L	0.300	0.283	94	80 - 120	2011-06-22

Standard (CCV-1)

QC Batch: 82512 | Date Analyzed: 2011-06-24 | 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	0.111	111	80 - 120	2011-06-24
Toluene		1	mg/L	0.100	0.116	116	80 - 120	2011-06-24
Ethylbenzene		1	mg/L	0.100	0.0956	96	80 - 120	2011-06-24
Xylene		1	mg/L	0.300	0.287	96	80 - 120	2011-06-24

Standard (CCV-2)

QC Batch: 82512 | Date Analyzed: 2011-06-24 | 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	0.106	106	80 - 120	2011-06-24
Toluene		1	mg/L	0.100	0.108	108	80 - 120	2011-06-24
Ethylbenzene		1	mg/L	0.100	0.0901	90	80 - 120	2011-06-24
Xylene		1	mg/L	0.300	0.268	89	80 - 120	2011-06-24

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 # 1106173

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: CRA

Phone #: 432-686-0086

Address: (Street, City, Zip) 2135 S. Loop 250 West Midland, TX

Fax #: 686-0186

Contact Person: Todd Wells

E-mail: Twells@craworld.com

Invoice to: (If different from above) Evan Henry - Plains SRS # LF 1999-62

Project #: 074685

Project Name: Darr Angell #2

Project Location (including state): Lea County, NM

Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
26704	DUP-3 061611	3		✓				✓						6-16-1	
705	MW-11 061611	3		✓				✓						6-16-11	900
706	MW-3 061611	3		✓				✓						6-16-11	915

	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
26704		✓	✓																						
705		✓	✓																						
706		✓	✓																						

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
Todd Wells	CRA	6-17-11	0910		TA	6.17.11	9:10	INST ___ OBS 5.7 °C COR 3.7 °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

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

ORIGINAL COPY

Carrier #

Summary Report

Todd Wells
CRA-Midland
2135 South Loop 250 West
Midland, TX 79703

Report Date: September 13, 2011

Work Order: 11090924

Project Location: Lea Co., NM
Project Name: Darr Angel #2
Project Number: 074685
SRS#: LF 1999-62

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
276714	DUP-2 090911	water	2011-09-09	00:00	2011-09-09
276715	MW-3 090911	water	2011-09-09	12:10	2011-09-09
276716	MW-11 090911	water	2011-09-09	12:20	2011-09-09

	BTEX			
Sample - Field Code	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)
276714 - DUP-2 090911	**0.410**	<0.00100	**0.0839**	**0.0700**
276715 - MW-3 090911	**0.394**	<0.00500	**0.0890**	**0.121**
276716 - MW-11 090911	<0.00100	<0.00100	<0.00100	<0.00100

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
6015 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

Todd Wells
CRA-Midland
2135 South Loop 250 West
Midland, TX, 79703

Report Date: September 13, 2011

Work Order: 11090924

Project Location: Lea Co., NM
Project Name: Darr Angel #2
Project Number: 074685
SRS#: LF 1999-62

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
276714	DUP-2 090911	water	2011-09-09	00:00	2011-09-09
276715	MW-3 090911	water	2011-09-09	12:10	2011-09-09
276716	MW-11 090911	water	2011-09-09	12:20	2011-09-09

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 Darr Angel #2 were received by TraceAnalysis, Inc. on 2011-09-09 and assigned to work order 11090924. Samples for work order 11090924 were received intact without headspace and at a temperature of 4.0 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	71844	2011-09-09 at 16:30	84610	2011-09-09 at 17:45
BTEX	S 8021B	71868	2011-09-12 at 08:00	84644	2011-09-12 at 08:37
BTEX	S 8021B	71868	2011-09-12 at 08:00	84647	2011-09-13 at 00:00

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 11090924 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: 276714 - DUP-2 090911

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	84610	Date Analyzed:	2011-09-09	Analyzed By:	AG
Prep Batch:	71844	Sample Preparation:	2011-09-09	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.410**	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	**0.0839**	mg/L	1	0.00100
Xylene		1	**0.0700**	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	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.132	mg/L	1	0.100	132	67.5 - 140.8

Sample: 276715 - MW-3 090911

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	84647	Date Analyzed:	2011-09-13	Analyzed By:	AG
Prep Batch:	71868	Sample Preparation:	2011-09-12	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.394**	mg/L	5	0.00100
Toluene	U	1	<0.00500	mg/L	5	0.00100
Ethylbenzene		1	**0.0890**	mg/L	5	0.00100
Xylene		1	**0.121**	mg/L	5	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.482	mg/L	5	0.500	96	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.403	mg/L	5	0.500	81	67.5 - 140.8

Sample: 276716 - MW-11 090911

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	84644	Date Analyzed:	2011-09-12	Analyzed By:	AG
Prep Batch:	71868	Sample Preparation:	2011-09-12	Prepared By:	AG

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)			0.108	mg/L	1	0.100	108	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0743	mg/L	1	0.100	74	67.5 - 140.8

Method Blanks

Method Blank (1) QC Batch: 84610

QC Batch: 84610 | Date Analyzed: 2011-09-09 | Analyzed By: AG
Prep Batch: 71844 | QC Preparation: 2011-09-09 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000400	mg/L	0.001
Toluene		1	<0.000300	mg/L	0.001
Ethylbenzene		1	<0.000300	mg/L	0.001
Xylene		1	<0.000333	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.102	mg/L	1	0.100	102	61.1 - 118.4
4-Bromofluorobenzene (4-BFB)			0.0870	mg/L	1	0.100	87	45.9 - 126.4

Method Blank (1) QC Batch: 84644

QC Batch: 84644 | Date Analyzed: 2011-09-12 | Analyzed By: AG
Prep Batch: 71868 | QC Preparation: 2011-09-12 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000400	mg/L	0.001
Toluene		1	<0.000300	mg/L	0.001
Ethylbenzene		1	<0.000300	mg/L	0.001
Xylene		1	<0.000333	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.109	mg/L	1	0.100	109	61.1 - 118.4
4-Bromofluorobenzene (4-BFB)			0.0907	mg/L	1	0.100	91	45.9 - 126.4

Method Blank (1) QC Batch: 84647

QC Batch: 84647 | Date Analyzed: 2011-09-13 | Analyzed By: AG
Prep Batch: 71868 | QC Preparation: 2011-09-12 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000400	mg/L	0.001
Toluene		1	<0.000300	mg/L	0.001
Ethylbenzene		1	<0.000300	mg/L	0.001
Xylene		1	<0.000333	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.101	mg/L	1	0.100	101	61.1 - 118.4
4-Bromofluorobenzene (4-BFB)			0.0723	mg/L	1	0.100	72	45.9 - 126.4

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 84610 | Date Analyzed: 2011-09-09 | Analyzed By: AG
Prep Batch: 71844 | QC Preparation: 2011-09-09 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0998	mg/L	1	0.100	<0.000400	100	76.8 - 110.3
Toluene		1	0.102	mg/L	1	0.100	<0.000300	102	90.9 - 122.2
Ethylbenzene		1	0.101	mg/L	1	0.100	<0.000300	101	72.7 - 120.2
Xylene		1	0.300	mg/L	1	0.300	<0.000333	100	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	0.0967	mg/L	1	0.100	<0.000400	97	76.8 - 110.3	3	20
Toluene		1	0.0984	mg/L	1	0.100	<0.000300	98	90.9 - 122.2	4	20
Ethylbenzene		1	0.0980	mg/L	1	0.100	<0.000300	98	72.7 - 120.2	3	20
Xylene		1	0.291	mg/L	1	0.300	<0.000333	97	72.1 - 121.5	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)	0.103	0.104	mg/L	1	0.100	103	104	61.9 - 119.2
4-Bromofluorobenzene (4-BFB)	0.0983	0.0964	mg/L	1	0.100	98	96	56.4 - 127.9

Laboratory Control Spike (LCS-1)

QC Batch: 84644 | Date Analyzed: 2011-09-12 | Analyzed By: AG
Prep Batch: 71868 | QC Preparation: 2011-09-12 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.101	mg/L	1	0.100	<0.000400	101	76.8 - 110.3
Toluene		1	0.102	mg/L	1	0.100	<0.000300	102	90.9 - 122.2
Ethylbenzene		1	0.101	mg/L	1	0.100	<0.000300	101	72.7 - 120.2
Xylene		1	0.301	mg/L	1	0.300	<0.000333	100	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	0.105	mg/L	1	0.100	<0.000400	105	76.8 - 110.3	4	20
Toluene		1	0.107	mg/L	1	0.100	<0.000300	107	90.9 - 122.2	5	20
Ethylbenzene		1	0.105	mg/L	1	0.100	<0.000300	105	72.7 - 120.2	4	20
Xylene		1	0.315	mg/L	1	0.300	<0.000333	105	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)	0.109	0.107	mg/L	1	0.100	109	107	61.9 - 119.2
4-Bromofluorobenzene (4-BFB)	0.0992	0.100	mg/L	1	0.100	99	100	56.4 - 127.9

Laboratory Control Spike (LCS-1)

QC Batch: 84647 | Date Analyzed: 2011-09-13 | Analyzed By: AG
Prep Batch: 71868 | QC Preparation: 2011-09-12 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.102	mg/L	1	0.100	<0.000400	102	76.8 - 110.3
Toluene		1	0.102	mg/L	1	0.100	<0.000300	102	90.9 - 122.2
Ethylbenzene		1	0.0984	mg/L	1	0.100	<0.000300	98	72.7 - 120.2
Xylene		1	0.289	mg/L	1	0.300	<0.000333	96	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 - 110.3	0	20
Toluene		1	0.103	mg/L	1	0.100	<0.000300	103	90.9 - 122.2	1	20
Ethylbenzene		1	0.0993	mg/L	1	0.100	<0.000300	99	72.7 - 120.2	1	20
Xylene		1	0.295	mg/L	1	0.300	<0.000333	98	72.1 - 121.5	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)	0.103	0.105	mg/L	1	0.100	103	105	61.9 - 119.2
4-Bromofluorobenzene (4-BFB)	0.0869	0.0882	mg/L	1	0.100	87	88	56.4 - 127.9

Matrix Spike (MS-1) Spiked Sample: 276716

QC Batch: 84610 | Date Analyzed: 2011-09-09 | Analyzed By: AG
Prep Batch: 71844 | QC Preparation: 2011-09-09 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	4.61	mg/L	50	5.00	<0.0200	92	66.9 - 128.2
Toluene		1	4.57	mg/L	50	5.00	<0.0150	91	81.6 - 122.9
Ethylbenzene		1	4.42	mg/L	50	5.00	<0.0150	88	62.7 - 117.9
Xylene		1	12.9	mg/L	50	15.0	<0.0166	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		1	4.60	mg/L	50	5.00	<0.0200	92	66.9 - 128.2	0	20
Toluene		1	4.58	mg/L	50	5.00	<0.0150	92	81.6 - 122.9	0	20
Ethylbenzene		1	4.46	mg/L	50	5.00	<0.0150	89	62.7 - 117.9	1	20
Xylene		1	13.1	mg/L	50	15.0	<0.0166	87	62.9 - 118.2	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	4.72	4.64	mg/L	50	5	94	93	58.6 - 119.7
4-Bromofluorobenzene (4-BFB)	3.98	3.87	mg/L	50	5	80	77	52.2 - 135.8

Matrix Spike (MS-1) Spiked Sample: 276740

QC Batch: 84644 | Date Analyzed: 2011-09-12 | Analyzed By: AG
Prep Batch: 71868 | QC Preparation: 2011-09-12 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	6.66	mg/L	50	5.00	1.5923	101	66.9 - 128.2
Toluene		1	5.14	mg/L	50	5.00	0.3113	96	81.6 - 122.9
Ethylbenzene		1	4.94	mg/L	50	5.00	0.28	93	62.7 - 117.9
Xylene		1	14.4	mg/L	50	15.0	0.8186	90	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	6.53	mg/L	50	5.00	1.5923	99	66.9 - 128.2	2	20
Toluene		1	5.14	mg/L	50	5.00	0.3113	96	81.6 - 122.9	0	20

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene		1	4.87	mg/L	50	5.00	0.28	92	62.7 - 117.9	1	20
Xylene		1	14.4	mg/L	50	15.0	0.8186	90	62.9 - 118.2	0	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)	5.49	5.06	mg/L	50	5	110	101	58.6 - 119.7
4-Bromofluorobenzene (4-BFB)	4.47	4.16	mg/L	50	5	89	83	52.2 - 135.8

Matrix Spike (MS-1) Spiked Sample: 276741

QC Batch: 84647 | Date Analyzed: 2011-09-13 | Analyzed By: AG
Prep Batch: 71868 | QC Preparation: 2011-09-12 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	7.12	mg/L	50	5.00	2.1635	99	66.9 - 128.2
Toluene		1	5.56	mg/L	50	5.00	0.695	97	81.6 - 122.9
Ethylbenzene		1	5.01	mg/L	50	5.00	<0.0150	100	62.7 - 117.9
Xylene		1	14.5	mg/L	50	15.0	0.8766	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	6.97	mg/L	50	5.00	2.1635	96	66.9 - 128.2	2	20
Toluene		1	5.44	mg/L	50	5.00	0.695	95	81.6 - 122.9	2	20
Ethylbenzene		1	4.92	mg/L	50	5.00	<0.0150	98	62.7 - 117.9	2	20
Xylene		1	14.2	mg/L	50	15.0	0.8766	89	62.9 - 118.2	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	5.15	4.82	mg/L	50	5	103	96	58.6 - 119.7
4-Bromofluorobenzene (4-BFB)	4.32	4.22	mg/L	50	5	86	84	52.2 - 135.8

Calibration Standards

Standard (CCV-1)

QC Batch: 84610 | Date Analyzed: 2011-09-09 | 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	0.0959	96	80 - 120	2011-09-09
Toluene		1	mg/L	0.100	0.0955	96	80 - 120	2011-09-09
Ethylbenzene		1	mg/L	0.100	0.0932	93	80 - 120	2011-09-09
Xylene		1	mg/L	0.300	0.279	93	80 - 120	2011-09-09

Standard (CCV-2)

QC Batch: 84610 | Date Analyzed: 2011-09-09 | 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	0.0967	97	80 - 120	2011-09-09
Toluene		1	mg/L	0.100	0.0948	95	80 - 120	2011-09-09
Ethylbenzene		1	mg/L	0.100	0.0895	90	80 - 120	2011-09-09
Xylene		1	mg/L	0.300	0.264	88	80 - 120	2011-09-09

Standard (CCV-2)

QC Batch: 84644 | Date Analyzed: 2011-09-12 | 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	0.105	105	80 - 120	2011-09-12
Toluene		1	mg/L	0.100	0.105	105	80 - 120	2011-09-12
Ethylbenzene		1	mg/L	0.100	0.100	100	80 - 120	2011-09-12
Xylene		1	mg/L	0.300	0.296	99	80 - 120	2011-09-12

Standard (CCV-3)

QC Batch: 84644 | Date Analyzed: 2011-09-12 | 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	0.0990	99	80 - 120	2011-09-12
Toluene		1	mg/L	0.100	0.0990	99	80 - 120	2011-09-12
Ethylbenzene		1	mg/L	0.100	0.0950	95	80 - 120	2011-09-12
Xylene		1	mg/L	0.300	0.281	94	80 - 120	2011-09-12

Standard (CCV-1)

QC Batch: 84647 | Date Analyzed: 2011-09-13 | 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	0.0972	97	80 - 120	2011-09-13
Toluene		1	mg/L	0.100	0.0973	97	80 - 120	2011-09-13
Ethylbenzene		1	mg/L	0.100	0.0935	94	80 - 120	2011-09-13
Xylene		1	mg/L	0.300	0.278	93	80 - 120	2011-09-13

Standard (CCV-2)

QC Batch: 84647 | Date Analyzed: 2011-09-13 | 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	0.0969	97	80 - 120	2011-09-13
Toluene		1	mg/L	0.100	0.0962	96	80 - 120	2011-09-13
Ethylbenzene		1	mg/L	0.100	0.0922	92	80 - 120	2011-09-13
Xylene		1	mg/L	0.300	0.271	90	80 - 120	2011-09-13

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 # 11090924

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: CRA
Phone #: 432-686-0086
Address: (Street, City, Zip) 2135 S. Loop 250 W. Midland Tx
Fax #: 432-686-0186
Contact Person: Todd Wells
E-mail:
Invoice to: (If different from above) Jason Henry w/Plains All American SRS# Dow Angell #2
Project #: 074685
Project Name: Dow Angell #2
Project Location (including state): Dow Angell Ranch NM
Sampler Signature:

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
27614	Dup-2 090911	3		X				X						9-9-11	
715	MW-3 090911	3		X				X						9-9-11	1210
716	MW-11 090911	3		X				X						9-9-11	1220

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	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
X	X																							
X	X																							
X	X																							

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
	CRA	9-9-11	1425		T/A	9/9/11	14:25

INST ____ OBS 4.0 °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

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

Carrier # Carey

ORIGINAL COPY

Summary Report

Todd Wells
CRA-Midland
2135 South Loop 250 West
Midland, TX 79703

Report Date: December 14, 2011

Work Order: 11120507

Project Location: Lea Co., NM
Project Name: Darr Angel #2
Project Number: 074685
SRS#: LF 1999-62

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
283682	MW 1 120111	water	2011-12-01	13:10	2011-12-02
283683	MW 3 120111	water	2011-12-01	14:55	2011-12-02
283684	MW 6 120111	water	2011-12-01	13:40	2011-12-02
283685	MW 7 120111	water	2011-12-01	13:55	2011-12-02
283686	MW 8 120111	water	2011-12-01	14:10	2011-12-02
283687	MW 9 120111	water	2011-12-01	14:25	2011-12-02
283688	MW 10 120111	water	2011-12-01	14:40	2011-12-02
283689	MW 11 120111	water	2011-12-01	14:55	2011-12-02
283690	Dup. 4	water	2011-12-01	13:55	2011-12-02
283691	Dup. 5	water	2011-12-01	14:55	2011-12-02

	BTEX				MTBE
Sample - Field Code	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	MTBE (mg/L)
283682 - MW 1 120111	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	
283683 - MW 3 120111	**0.101** Qs	<0.00100 Qs	**0.145** Qs	**0.0258** Qs	
283684 - MW 6 120111	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	
283685 - MW 7 120111	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	
283686 - MW 8 120111	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	
283687 - MW 9 120111	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	
283688 - MW 10 120111	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	
283689 - MW 11 120111	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	
283690 - Dup. 4	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	<0.00100 Qs	
283691 - Dup. 5	**0.0999**	<0.00100 Qs	**0.146**	**0.0313**	

Sample: 283683 - MW 3 120111

Param	Flag	Result	Units	RL
Naphthalene		**0.00893**	mg/L	0.0002
2-Methylnaphthalene		<0.000183	mg/L	0.0002
1-Methylnaphthalene		**0.0191**	mg/L	0.0002
Acenaphthylene		<0.000183	mg/L	0.0002
Acenaphthene		<0.000183	mg/L	0.0002
Dibenzofuran		**0.00163**	mg/L	0.0002
Fluorene		**0.00140**	mg/L	0.0002
Anthracene	Qs	<0.000183	mg/L	0.0002
Phenanthrene	Qs	**0.00135**	mg/L	0.0002
Fluoranthene		<0.000183	mg/L	0.0002
Pyrene		<0.000183	mg/L	0.0002
Benzo(a)anthracene	Qs	<0.000183	mg/L	0.0002
Chrysene		<0.000183	mg/L	0.0002
Benzo(b)fluoranthene		<0.000183	mg/L	0.0002
Benzo(k)fluoranthene		<0.000183	mg/L	0.0002
Benzo(a)pyrene		<0.000183	mg/L	0.0002
Indeno(1,2,3-cd)pyrene		<0.000183	mg/L	0.0002
Dibenzo(a,h)anthracene		<0.000183	mg/L	0.0002
Benzo(g,h,i)perylene		<0.000183	mg/L	0.0002

Sample: 283691 - Dup. 5

Param	Flag	Result	Units	RL
Naphthalene		**0.0121**	mg/L	0.0002
2-Methylnaphthalene		**0.000314**	mg/L	0.0002
1-Methylnaphthalene		**0.0207**	mg/L	0.0002
Acenaphthylene		<0.000183	mg/L	0.0002
Acenaphthene		<0.000183	mg/L	0.0002
Dibenzofuran		**0.00155**	mg/L	0.0002
Fluorene		**0.00126**	mg/L	0.0002
Anthracene	Qs	<0.000183	mg/L	0.0002
Phenanthrene	Qs	**0.00128**	mg/L	0.0002
Fluoranthene		<0.000183	mg/L	0.0002
Pyrene		<0.000183	mg/L	0.0002
Benzo(a)anthracene	Qs	<0.000183	mg/L	0.0002
Chrysene		<0.000183	mg/L	0.0002
Benzo(b)fluoranthene		<0.000183	mg/L	0.0002
Benzo(k)fluoranthene		<0.000183	mg/L	0.0002
Benzo(a)pyrene		<0.000183	mg/L	0.0002
Indeno(1,2,3-cd)pyrene		<0.000183	mg/L	0.0002
Dibenzo(a,h)anthracene		<0.000183	mg/L	0.0002
Benzo(g,h,i)perylene		<0.000183	mg/L	0.0002

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6015 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

Todd Wells
CRA-Midland
2135 South Loop 250 West
Midland, TX, 79703

Report Date: December 14, 2011

Work Order: 11120507

Project Location: Lea Co., NM
Project Name: Darr Angel #2
Project Number: 074685
SRS#: LF 1999-62

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
283682	MW 1 120111	water	2011-12-01	13:10	2011-12-02
283683	MW 3 120111	water	2011-12-01	14:55	2011-12-02
283684	MW 6 120111	water	2011-12-01	13:40	2011-12-02
283685	MW 7 120111	water	2011-12-01	13:55	2011-12-02
283686	MW 8 120111	water	2011-12-01	14:10	2011-12-02
283687	MW 9 120111	water	2011-12-01	14:25	2011-12-02
283688	MW 10 120111	water	2011-12-01	14:40	2011-12-02
283689	MW 11 120111	water	2011-12-01	14:55	2011-12-02
283690	Dup. 4	water	2011-12-01	13:55	2011-12-02
283691	Dup. 5	water	2011-12-01	14:55	2011-12-02

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 Darr Angel #2 were received by TraceAnalysis, Inc. on 2011-12-02 and assigned to work order 11120507. Samples for work order 11120507 were received intact without headspace and at a temperature of 1.0 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	73836	2011-12-06 at 13:11	86959	2011-12-06 at 13:11
BTEX	S 8021B	73894	2011-12-08 at 08:47	87026	2011-12-08 at 08:47
PAH	S 8270D	73942	2011-12-07 at 15:00	87077	2011-12-12 at 11:05

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 11120507 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: 283682 - MW 1 120111

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86959	Date Analyzed:	2011-12-06	Analyzed By:	ZLM
Prep Batch:	73836	Sample Preparation:	2011-12-06	Prepared By:	ZLM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.102	mg/L	1	0.100	102	70 - 130
4-Bromofluorobenzene (4-BFB)			0.106	mg/L	1	0.100	106	70 - 130

Sample: 283683 - MW 3 120111

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86959	Date Analyzed:	2011-12-06	Analyzed By:	ZLM
Prep Batch:	73836	Sample Preparation:	2011-12-06	Prepared By:	ZLM

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qs	Qs	1	**0.101**	mg/L	1	0.00100
Toluene	Qs,U	Qs,U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Qs	Qs	1	**0.145**	mg/L	1	0.00100
Xylene	Qs	Qs	1	**0.0258**	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.102	mg/L	1	0.100	102	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	0.173	mg/L	1	0.100	173	70 - 130

Sample: 283683 - MW 3 120111

Laboratory:	Lubbock				
Analysis:	PAH	Analytical Method:	S 8270D	Prep Method:	S 3510C
QC Batch:	87077	Date Analyzed:	2011-12-12	Analyzed By:	MN
Prep Batch:	73942	Sample Preparation:	2011-12-07	Prepared By:	MN

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Naphthalene			1	**0.00893**	mg/L	0.917	0.000200
2-Methylnaphthalene	U	U	1	<0.000183	mg/L	0.917	0.000200
1-Methylnaphthalene				**0.0191**	mg/L	0.917	0.000200
Acenaphthylene	U	U	1	<0.000183	mg/L	0.917	0.000200
Acenaphthene	U	U	1	<0.000183	mg/L	0.917	0.000200
Dibenzofuran			1	**0.00163**	mg/L	0.917	0.000200
Fluorene			1	**0.00140**	mg/L	0.917	0.000200
Anthracene	Qs,U	Qs,U	1	<0.000183	mg/L	0.917	0.000200
Phenanthrene	Qs	Qs		**0.00135**	mg/L	0.917	0.000200
Fluoranthene	U	U		<0.000183	mg/L	0.917	0.000200
Pyrene	U	U	1	<0.000183	mg/L	0.917	0.000200
Benzo(a)anthracene	Qs,U	Qs,U		<0.000183	mg/L	0.917	0.000200
Chrysene	U	U	1	<0.000183	mg/L	0.917	0.000200
Benzo(b)fluoranthene	U	U		<0.000183	mg/L	0.917	0.000200
Benzo(k)fluoranthene	U	U	1	<0.000183	mg/L	0.917	0.000200
Benzo(a)pyrene	U	U	1	<0.000183	mg/L	0.917	0.000200
Indeno(1,2,3-cd)pyrene	U	U	1	<0.000183	mg/L	0.917	0.000200
Dibenzo(a,h)anthracene	U	U	1	<0.000183	mg/L	0.917	0.000200
Benzo(g,h,i)perylene	U	U		<0.000183	mg/L	0.917	0.000200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5			0.0545	mg/L	0.917	0.0800	68	10 - 117
2-Fluorobiphenyl			0.0509	mg/L	0.917	0.0800	64	10 - 99
Terphenyl-d14			0.0561	mg/L	0.917	0.0800	70	22.6 - 115

Sample: 283684 - MW 6 120111

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86959	Date Analyzed:	2011-12-06	Analyzed By:	ZLM
Prep Batch:	73836	Sample Preparation:	2011-12-06	Prepared By:	ZLM

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

continued ...

sample 283684 continued ...

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0986	mg/L	1	0.100	99	70 - 130
4-Bromofluorobenzene (4-BFB)			0.103	mg/L	1	0.100	103	70 - 130

Sample: 283685 - MW 7 120111

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86959	Date Analyzed:	2011-12-06	Analyzed By:	ZLM
Prep Batch:	73836	Sample Preparation:	2011-12-06	Prepared By:	ZLM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.107	mg/L	1	0.100	107	70 - 130
4-Bromofluorobenzene (4-BFB)			0.110	mg/L	1	0.100	110	70 - 130

Sample: 283686 - MW 8 120111

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86959	Date Analyzed:	2011-12-06	Analyzed By:	ZLM
Prep Batch:	73836	Sample Preparation:	2011-12-06	Prepared By:	ZLM

continued ...

sample 283686 continued ...

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0960	mg/L	1	0.100	96	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0995	mg/L	1	0.100	100	70 - 130

Sample: 283687 - MW 9 120111

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86959	Date Analyzed:	2011-12-06	Analyzed By:	ZLM
Prep Batch:	73836	Sample Preparation:	2011-12-06	Prepared By:	ZLM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0959	mg/L	1	0.100	96	70 - 130
4-Bromofluorobenzene (4-BFB)			0.101	mg/L	1	0.100	101	70 - 130

Sample: 283688 - MW 10 120111

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86959	Date Analyzed:	2011-12-06	Analyzed By:	ZLM
Prep Batch:	73836	Sample Preparation:	2011-12-06	Prepared By:	ZLM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.104	mg/L	1	0.100	104	70 - 130
4-Bromofluorobenzene (4-BFB)			0.109	mg/L	1	0.100	109	70 - 130

Sample: 283689 - MW 11 120111

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86959	Date Analyzed:	2011-12-06	Analyzed By:	ZLM
Prep Batch:	73836	Sample Preparation:	2011-12-06	Prepared By:	ZLM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.104	mg/L	1	0.100	104	70 - 130
4-Bromofluorobenzene (4-BFB)			0.108	mg/L	1	0.100	108	70 - 130

Sample: 283690 - Dup. 4

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	86959	Date Analyzed:	2011-12-06	Analyzed By:	ZLM
Prep Batch:	73836	Sample Preparation:	2011-12-06	Prepared By:	ZLM

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

continued ...

sample 283690 continued ...

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0945	mg/L	1	0.100	94	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0988	mg/L	1	0.100	99	70 - 130

Sample: 283691 - Dup. 5

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	87026	Date Analyzed:	2011-12-08	Analyzed By:	ZLM
Prep Batch:	73894	Sample Preparation:	2011-12-08	Prepared By:	ZLM

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Benzene			1	**0.0999**	mg/L	1	0.00100
Toluene	Qs,U	Qs,U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene			1	**0.146**	mg/L	1	0.00100
Xylene			1	**0.0313**	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0779	mg/L	1	0.100	78	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	0.148	mg/L	1	0.100	148	70 - 130

Sample: 283691 - Dup. 5

Laboratory:	Lubbock				
Analysis:	PAH	Analytical Method:	S 8270D	Prep Method:	S 3510C
QC Batch:	87077	Date Analyzed:	2011-12-12	Analyzed By:	MN
Prep Batch:	73942	Sample Preparation:	2011-12-07	Prepared By:	MN

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Naphthalene		1	**0.0121**	mg/L	0.917	0.000200
2-Methylnaphthalene		1	**0.000314**	mg/L	0.917	0.000200

continued ...

sample 283691 continued ...

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
1-Methylnaphthalene				**0.0207**	mg/L	0.917	0.000200
Acenaphthylene	U	U	1	<0.000183	mg/L	0.917	0.000200
Acenaphthene	U	U	1	<0.000183	mg/L	0.917	0.000200
Dibenzofuran			1	**0.00155**	mg/L	0.917	0.000200
Fluorene			1	**0.00126**	mg/L	0.917	0.000200
Anthracene	Qs,U	Qs,U	1	<0.000183	mg/L	0.917	0.000200
Phenanthrene	Qs	Qs		**0.00128**	mg/L	0.917	0.000200
Fluoranthene	U	U		<0.000183	mg/L	0.917	0.000200
Pyrene	U	U	1	<0.000183	mg/L	0.917	0.000200
Benzo(a)anthracene	Qs,U	Qs,U		<0.000183	mg/L	0.917	0.000200
Chrysene	U	U	1	<0.000183	mg/L	0.917	0.000200
Benzo(b)fluoranthene	U	U		<0.000183	mg/L	0.917	0.000200
Benzo(k)fluoranthene	U	U	1	<0.000183	mg/L	0.917	0.000200
Benzo(a)pyrene	U	U	1	<0.000183	mg/L	0.917	0.000200
Indeno(1,2,3-cd)pyrene	U	U	1	<0.000183	mg/L	0.917	0.000200
Dibenzo(a,h)anthracene	U	U	1	<0.000183	mg/L	0.917	0.000200
Benzo(g,h,i)perylene	U	U		<0.000183	mg/L	0.917	0.000200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5			0.0546	mg/L	0.917	0.0800	68	10 - 117
2-Fluorobiphenyl			0.0521	mg/L	0.917	0.0800	65	10 - 99
Terphenyl-d14			0.0586	mg/L	0.917	0.0800	73	22.6 - 115

Method Blanks

Method Blank (1) QC Batch: 86959

QC Batch: 86959 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM
Prep Batch: 73836 | QC Preparation: 2011-12-06 | Prepared By: ZLM

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000765	mg/L	0.001
Toluene		1	<0.000719	mg/L	0.001
Ethylbenzene		1	<0.000860	mg/L	0.001
Xylene		1	<0.000942	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0948	mg/L	1	0.100	95	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0981	mg/L	1	0.100	98	70 - 130

Method Blank (1) QC Batch: 87026

QC Batch: 87026 | Date Analyzed: 2011-12-08 | Analyzed By: ZLM
Prep Batch: 73894 | QC Preparation: 2011-12-08 | Prepared By: ZLM

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000765	mg/L	0.001
Toluene		1	<0.000719	mg/L	0.001
Ethylbenzene		1	<0.000860	mg/L	0.001
Xylene		1	<0.000942	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.102	mg/L	1	0.100	102	70 - 130
4-Bromofluorobenzene (4-BFB)			0.108	mg/L	1	0.100	108	70 - 130

Method Blank (1) QC Batch: 87077

QC Batch: 87077 | Date Analyzed: 2011-12-12 | Analyzed By: MN
Prep Batch: 73942 | QC Preparation: 2011-12-07 | 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	0.000511	mg/L	0.0002
Dibenzo(a,h)anthracene		1	0.000474	mg/L	0.0002
Benzo(g,h,i)perylene			0.000653	mg/L	0.0002

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5			0.0549	mg/L	1	0.0800	69	10 - 117
2-Fluorobiphenyl			0.0432	mg/L	1	0.0800	54	10 - 99
Terphenyl-d14			0.0530	mg/L	1	0.0800	66	22.6 - 115

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 86959 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM
Prep Batch: 73836 | QC Preparation: 2011-12-06 | Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0975	mg/L	1	0.100	<0.000765	98	70 - 130
Toluene		1	0.0945	mg/L	1	0.100	<0.000719	94	70 - 130
Ethylbenzene		1	0.0939	mg/L	1	0.100	<0.000860	94	70 - 130
Xylene		1	0.280	mg/L	1	0.300	<0.000942	93	70 - 130

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	0.0981	mg/L	1	0.100	<0.000765	98	70 - 130	1	20
Toluene		1	0.0954	mg/L	1	0.100	<0.000719	95	70 - 130	1	20
Ethylbenzene		1	0.0955	mg/L	1	0.100	<0.000860	96	70 - 130	2	20
Xylene		1	0.285	mg/L	1	0.300	<0.000942	95	70 - 130	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)	0.0971	0.0981	mg/L	1	0.100	97	98	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0961	0.0988	mg/L	1	0.100	96	99	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 87026 | Date Analyzed: 2011-12-08 | Analyzed By: ZLM
Prep Batch: 73894 | QC Preparation: 2011-12-08 | Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0961	mg/L	1	0.100	<0.000765	96	70 - 130
Toluene		1	0.0941	mg/L	1	0.100	<0.000719	94	70 - 130
Ethylbenzene		1	0.0933	mg/L	1	0.100	<0.000860	93	70 - 130
Xylene		1	0.281	mg/L	1	0.300	<0.000942	94	70 - 130

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	0.0969	mg/L	1	0.100	<0.000765	97	70 - 130	1	20
Toluene		1	0.0952	mg/L	1	0.100	<0.000719	95	70 - 130	1	20
Ethylbenzene		1	0.0951	mg/L	1	0.100	<0.000860	95	70 - 130	2	20
Xylene		1	0.285	mg/L	1	0.300	<0.000942	95	70 - 130	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0923	0.0917	mg/L	1	0.100	92	92	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0929	0.0931	mg/L	1	0.100	93	93	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 87077 | Date Analyzed: 2011-12-12 | Analyzed By: MN
Prep Batch: 73942 | QC Preparation: 2011-12-07 | Prepared By: MN

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Naphthalene		1	0.0411	mg/L	1	0.0800	<0.0000904	51	10 - 89.9
2-Methylnaphthalene		1	0.0462	mg/L	1	0.0800	<0.000184	58	13.8 - 98.4
1-Methylnaphthalene			0.0529	mg/L	1	0.0800	<0.000120	66	13.1 - 103
Acenaphthylene		1	0.0576	mg/L	1	0.0800	<0.000101	72	20 - 104
Acenaphthene		1	0.0561	mg/L	1	0.0800	<0.000122	70	21.6 - 94.6
Dibenzofuran		1	0.0425	mg/L	1	0.0800	<0.000119	53	22.9 - 74.9
Fluorene		1	0.0646	mg/L	1	0.0800	<0.000198	81	30.8 - 109
Anthracene		1	0.0759	mg/L	1	0.0800	<0.000190	95	37.6 - 96.4
Phenanthrene			0.0793	mg/L	1	0.0800	<0.000190	99	42.4 - 99.8
Fluoranthene			0.0806	mg/L	1	0.0800	<0.000122	101	48 - 118
Pyrene		1	0.0752	mg/L	1	0.0800	<0.000142	94	45.3 - 109
Benzo(a)anthracene			0.0866	mg/L	1	0.0800	<0.000138	108	48 - 113
Chrysene		1	0.0692	mg/L	1	0.0800	<0.000155	86	35.2 - 175
Benzo(b)fluoranthene			0.0658	mg/L	1	0.0800	<0.000179	82	16.6 - 106
Benzo(k)fluoranthene		1	0.0673	mg/L	1	0.0800	<0.000185	84	36.8 - 99.4
Benzo(a)pyrene		1	0.0698	mg/L	1	0.0800	<0.000169	87	32.3 - 99.7
Indeno(1,2,3-cd)pyrene		1	0.0681	mg/L	1	0.0800	0.000511	84	34.1 - 106
Dibenzo(a,h)anthracene		1	0.0584	mg/L	1	0.0800	0.000474	72	47.1 - 103
Benzo(g,h,i)perylene			0.0719	mg/L	1	0.0800	0.000653	89	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		1	0.0468	mg/L	1	0.0800	<0.0000904	58	10 - 89.9	13	20

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
2-Methylnaphthalene		1	0.0526	mg/L	1	0.0800	<0.000184	66	13.8 - 98.4	13	20
1-Methylnaphthalene			0.0600	mg/L	1	0.0800	<0.000120	75	13.1 - 103	13	20
Acenaphthylene		1	0.0670	mg/L	1	0.0800	<0.000101	84	20 - 104	15	20
Acenaphthene		1	0.0651	mg/L	1	0.0800	<0.000122	81	21.6 - 94.6	15	20
Dibenzofuran		1	0.0483	mg/L	1	0.0800	<0.000119	60	22.9 - 74.9	13	20
Fluorene		1	0.0708	mg/L	1	0.0800	<0.000198	88	30.8 - 109	9	20
Anthracene	Qs	Qs 1	0.0863	mg/L	1	0.0800	<0.000190	108	37.6 - 96.4	13	20
Phenanthrene	Qs	Qs	0.0904	mg/L	1	0.0800	<0.000190	113	42.4 - 99.8	13	20
Fluoranthene			0.0944	mg/L	1	0.0800	<0.000122	118	48 - 118	16	20
Pyrene		1	0.0836	mg/L	1	0.0800	<0.000142	104	45.3 - 109	11	20
Benzo(a)anthracene	Qs	Qs	0.0985	mg/L	1	0.0800	<0.000138	123	48 - 113	13	20
Chrysene		1	0.0792	mg/L	1	0.0800	<0.000155	99	35.2 - 175	14	20
Benzo(b)fluoranthene			0.0760	mg/L	1	0.0800	<0.000179	95	16.6 - 106	14	20
Benzo(k)fluoranthene		1	0.0765	mg/L	1	0.0800	<0.000185	96	36.8 - 99.4	13	20
Benzo(a)pyrene		1	0.0786	mg/L	1	0.0800	<0.000169	98	32.3 - 99.7	12	20
Indeno(1,2,3-cd)pyrene		1	0.0755	mg/L	1	0.0800	0.000511	94	34.1 - 106	10	20
Dibenzo(a,h)anthracene		1	0.0649	mg/L	1	0.0800	0.000474	80	47.1 - 103	10	20
Benzo(g,h,i)perylene			0.0796	mg/L	1	0.0800	0.000653	99	21.9 - 112	10	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	0.0517	0.0579	mg/L	1	0.0800	65	72	10 - 117
2-Fluorobiphenyl	0.0488	0.0584	mg/L	1	0.0800	61	73	10 - 99
Terphenyl-d14	0.0804	0.0896	mg/L	1	0.0800	100	112	22.6 - 115

Matrix Spike (MS-1) Spiked Sample: 283681

QC Batch: 86959 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM
Prep Batch: 73836 | QC Preparation: 2011-12-06 | Prepared By: ZLM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	Qs	Qs 1	0.0561	mg/L	1	0.100	<0.000765	56	70 - 130
Toluene	Qs	Qs 1	0.0523	mg/L	1	0.100	<0.000719	52	70 - 130
Ethylbenzene	Qs	Qs 1	0.0519	mg/L	1	0.100	<0.000860	52	70 - 130
Xylene	Qs	Qs 1	0.155	mg/L	1	0.300	<0.000942	52	70 - 130

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

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	Qs	Qs	0.0639	mg/L	1	0.100	<0.000765	64	70 - 130	13	20
Toluene	Qs	Qs	0.0601	mg/L	1	0.100	<0.000719	60	70 - 130	14	20
Ethylbenzene	Qs	Qs	0.0587	mg/L	1	0.100	<0.000860	59	70 - 130	12	20
Xylene	Qs	Qs	0.175	mg/L	1	0.300	<0.000942	58	70 - 130	12	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.102	0.0929	mg/L	1	0.1	102	93	70 - 130
4-Bromofluorobenzene (4-BFB)	0.101	0.0942	mg/L	1	0.1	101	94	70 - 130

Matrix Spike (MS-1) Spiked Sample: 283898

QC Batch: 87026 | Date Analyzed: 2011-12-08 | Analyzed By: ZLM
Prep Batch: 73894 | QC Preparation: 2011-12-08 | Prepared By: ZLM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0845	mg/L	1	0.100	0.0019	83	70 - 130
Toluene		1	0.0808	mg/L	1	0.100	<0.000719	81	70 - 130
Ethylbenzene		1	0.0826	mg/L	1	0.100	<0.000860	83	70 - 130
Xylene		1	0.246	mg/L	1	0.300	<0.000942	82	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0730	mg/L	1	0.100	0.0019	71	70 - 130	15	20
Toluene	Qs	Qs	0.0695	mg/L	1	0.100	<0.000719	70	70 - 130	15	20
Ethylbenzene		1	0.0716	mg/L	1	0.100	<0.000860	72	70 - 130	14	20
Xylene		1	0.214	mg/L	1	0.300	<0.000942	71	70 - 130	14	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)	0.101	0.0892	mg/L	1	0.1	101	89	70 - 130
4-Bromofluorobenzene (4-BFB)	0.102	0.0925	mg/L	1	0.1	102	92	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 86959 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0998	100	80 - 120	2011-12-06
Toluene		1	mg/L	0.100	0.0963	96	80 - 120	2011-12-06
Ethylbenzene		1	mg/L	0.100	0.0956	96	80 - 120	2011-12-06
Xylene		1	mg/L	0.300	0.286	95	80 - 120	2011-12-06

Standard (CCV-2)

QC Batch: 86959 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.100	100	80 - 120	2011-12-06
Toluene		1	mg/L	0.100	0.0965	96	80 - 120	2011-12-06
Ethylbenzene		1	mg/L	0.100	0.0959	96	80 - 120	2011-12-06
Xylene		1	mg/L	0.300	0.286	95	80 - 120	2011-12-06

Standard (CCV-3)

QC Batch: 86959 | Date Analyzed: 2011-12-06 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0988	99	80 - 120	2011-12-06
Toluene		1	mg/L	0.100	0.0965	96	80 - 120	2011-12-06
Ethylbenzene		1	mg/L	0.100	0.0980	98	80 - 120	2011-12-06
Xylene		1	mg/L	0.300	0.289	96	80 - 120	2011-12-06

Standard (CCV-1)

QC Batch: 87026 | Date Analyzed: 2011-12-08 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0994	99	80 - 120	2011-12-08
Toluene		1	mg/L	0.100	0.0959	96	80 - 120	2011-12-08
Ethylbenzene		1	mg/L	0.100	0.0964	96	80 - 120	2011-12-08
Xylene		1	mg/L	0.300	0.286	95	80 - 120	2011-12-08

Standard (CCV-2)

QC Batch: 87026 | Date Analyzed: 2011-12-08 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0892	89	80 - 120	2011-12-08
Toluene		1	mg/L	0.100	0.0869	87	80 - 120	2011-12-08
Ethylbenzene		1	mg/L	0.100	0.0873	87	80 - 120	2011-12-08
Xylene		1	mg/L	0.300	0.261	87	80 - 120	2011-12-08

Standard (CCV-1)

QC Batch: 87077 | Date Analyzed: 2011-12-12 | 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	50.4	84	80 - 120	2011-12-12
2-Methylnaphthalene		1	mg/L	60.0	51.3	86	80 - 120	2011-12-12
1-Methylnaphthalene			mg/L	60.0	58.7	98	80 - 120	2011-12-12
Acenaphthylene		1	mg/L	60.0	51.0	85	80 - 120	2011-12-12
Acenaphthene		1	mg/L	60.0	50.4	84	80 - 120	2011-12-12
Dibenzofuran		1	mg/L	60.0	50.3	84	80 - 120	2011-12-12
Fluorene		1	mg/L	60.0	49.5	82	80 - 120	2011-12-12
Anthracene		1	mg/L	60.0	59.7	100	80 - 120	2011-12-12
Phenanthrene			mg/L	60.0	59.6	99	80 - 120	2011-12-12
Fluoranthene			mg/L	60.0	60.7	101	80 - 120	2011-12-12
Pyrene		1	mg/L	60.0	55.1	92	80 - 120	2011-12-12
Benzo(a)anthracene			mg/L	60.0	60.6	101	80 - 120	2011-12-12

continued ...

standard continued ...

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chrysene		1	mg/L	60.0	52.8	88	80 - 120	2011-12-12
Benzo(b)fluoranthene			mg/L	60.0	59.2	99	80 - 120	2011-12-12
Benzo(k)fluoranthene		1	mg/L	60.0	49.2	82	80 - 120	2011-12-12
Benzo(a)pyrene		1	mg/L	60.0	52.9	88	80 - 120	2011-12-12
Indeno(1,2,3-cd)pyrene		1	mg/L	60.0	52.8	88	80 - 120	2011-12-12
Dibenzo(a,h)anthracene		1	mg/L	60.0	54.2	90	80 - 120	2011-12-12
Benzo(g,h,i)perylene			mg/L	60.0	51.1	85	80 - 120	2011-12-12

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
Nitrobenzene-d5			58.1	mg/L	1	60.0	97	-
2-Fluorobiphenyl			53.6	mg/L	1	60.0	89	-
Terphenyl-d14			58.6	mg/L	1	60.0	98	-

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 # 1112U507

Page 1 of 1

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

Company Name: CRA	Phone #: 432-686-0086
Address: (Street, City, Zip) 2135 S Loop 250 West, Midland 79703	Fax #: 432-686-0186
Contact Person: Todd Wells	E-mail: Twells@crawtx.com
Invoice to: (If different from above) Jason Henry	
Project #: 074685	Project Name: Dorr Angell #2
Project Location (including state): Lovington, NM	Sampler Signature:

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, Fl, S04, NO3, NO2, Alkalinity	Na, Ca, Mg, K, TDS, EC	Turn Around Time if different from standard	Hold
683682	MW1 120111	3	125	X				X						12-1	1310		X																			
683	MW3 120111	4	1-1/2 L	X				X						12-1	1455		X			X																
684	MW6 120111	3	125	X				X						12-1	1340		X																			
685	MW7 120111	3	125	X				X						12-1	1355		X																			
686	MW8 120111	3	125	X				X						12-1	1410		X																			
687	MW9 120111	3	125	X				X						12-1	1425		X																			
688	MW10 120111	3	125	X				X						12-1	1440		X																			
689	MW11 120111	3	125	X				X						12-1	1455		X																			
690	Dup 4	3	125	X				X						12-1	1355		X																			
691	Dup 5	4	1-1/2 L	X				X						12-1	1455		X			X																

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	CRA	12-2-11	1538					INST ____ OBS ____ °C COR ____ °C
								INST ____ OBS ____ °C COR ____ °C
				Brandy Ward	Trace Lubbock	12/2/11	15:38	INST IR OBS 10.9 °C COR 1.0 °C

LAB USE ONLY

Intact Y / N

Headspace Y (N) / NA

Log-in-Review MM

REMARKS:

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

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

Carrier # Caruso

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