3R - 432

AGWMR

04 / 19 / 2013

2012 QUARTERLY GROUNDWATER MONITORING REPORT

CONOCOPHILLIPS CHARLES ET AL. No. 1
SAN JUAN COUNTY, NEW MEXICO
API# 30-045-06623
NMOCD# 3R-432

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1.0 INTRODUCTION

This report presents the results of quarterly groundwater sampling events conducted during 2012 and January 2013 by Conestoga-Rovers & Associates, Inc. (CRA) at the ConocoPhillips Company (ConocoPhillips) Charles et al. No. 1 remediation site (Site) located near the Angel Peak area of northwestern New Mexico. The Site is located on Navajo Nation land in Section 12, Township 27N, Range 9W, of San Juan County, New Mexico. Geographical coordinates for the Site are 36°35'10.25" North, 107°44'24.89" West. A Site vicinity map and Site plan are included as **Figures 1** and **2**, respectively.

1.1 BACKGROUND

The historical timeline for the Site is summarized below, and is also presented in **Table 1**.

The Charles et al. No. 1 natural gas well was spudded in April 1965 by the Austral Oil Company of Houston, TX. Operatorship of the well was transferred several times before a subsidiary of Burlington Resources became the operator in August 1992. The well was abandoned shortly thereafter due to low production. The well was recompleted and production was restored on May 20, 2003. ConocoPhillips acquired Burlington Resources on March 30, 2006. ConocoPhillips plugged and abandoned the well on June 11, 2010.

A ConocoPhillips employee discovered an area of dead vegetation approximately 100 feet from the Blanco Wash and approximately ¼ mile from the Charles et al. No. 1 wellhead while investigating a pipeline release on June 23, 2008 (**Figure 2**). ConocoPhillips reported the release to the NMOCD by phone and e-mail on June 24, 2008 and submitted a Form C-141 to NMOCD on June 30, 2008. Envirotech, Inc. (Envirotech) advanced several soil borings and installed seven piezometer/monitor wells using a hand auger between June 25 and 26, 2008. Solar-powered soil vapor extraction (SVE) equipment was installed over Monitor Well MW-1 on August 14, 2008 to facilitate the remediation of the area (Envirotech, 2009). To date, the SVE equipment is operating and remains in place over Monitor Well MW-1.

Envirotech conducted quarterly groundwater sampling events beginning June 25, 2008 and recommended discontinuing the sampling of Monitor Wells MW-5, MW-6, and MW-7 in March 2009. Tetra Tech, Inc. (Tetra Tech) began monitoring the Charles et al. No. 1 remediation site in March, 2010. On June 15, 2011, Site

consulting responsibilities were transferred from Tetra Tech to CRA of Albuquerque, NM.

2.0 GROUNDWATER MONITORING SUMMARY, METHODOLOGY, AND ANALYTICAL RESULTS

2.1 GROUNDWATER MONITORING SUMMARY

Quarterly groundwater sampling events were conducted at the Site on March 7, June 4, September 17, 2012, and January 9, 2013. Prior to collection of groundwater samples from Monitor Wells MW-1, MW-2, MW-3 and MW-4, depth to groundwater was measured in all Site monitor wells using an oil/water interface probe. Groundwater potentiometric surface maps reflecting quarterly groundwater elevations are presented as **Figures 3, 4, 5,** and **6**, respectively. A historical groundwater elevation summary is included in **Table 2**.

2.2 GROUNDWATER MONITORING METHODOLOGY

During groundwater monitoring events, Monitor Wells MW-1, MW-2, MW-3, and MW-4 were purged of at least 3 casing volumes of groundwater using a 1.5-inch diameter, polyethylene, dedicated bailer. While bailing Monitor Wells MW-1, MW-2, MW-3, and MW-4, groundwater parameters were collected using a YSI 556 multi-parameter sonde and results were recorded on CRA Groundwater Sampling Field Forms (**Appendix A**). Groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped under chain-of-custody documentation to Pace Analytical Services, Inc. of Lenexa, Kansas. Groundwater samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8260.

2.3 GROUNDWATER MONITORING ANALYTICAL RESULTS

The Navajo Nation Environmental Protection Agency (NNEPA) has not established groundwater quality standards; however, drinking water quality on Navajo Nation land is mandated in Part II the Navajo Nation Primary Drinking Water Regulations (NNPDWR). Drinking water quality standards have been set for the protection of human health, domestic water supply, and irrigation use. Exceedences of NNPDWR water quality standards in Site monitor wells are discussed below.

March 2012

- **Benzene –** The NNPDWR drinking water quality standard for benzene is 0.005 milligrams per liter (mg/L). The concentration of benzene found in the groundwater sample collected from Monitor Well MW-1 was 0.0637 mg/L.

June 2012

- **Benzene –** The NNPDWR drinking water quality standard for benzene is 0.005 milligrams per liter (mg/L). The concentration of benzene found in the groundwater sample collected from Monitor Well MW-1 was 0.956 mg/L.

- **Ethylbenzene –** The NNPDWR drinking water quality standard for ethylbenzene is 0.7 milligrams per liter (mg/L). The concentration of ethylbenzene found in the groundwater sample collected from Monitor Well MW-1 was 0.919 mg/L.

- **Toluene –** The NNPDWR drinking water quality standard for toluene is 1.0 milligrams per liter (mg/L). The concentration of benzene found in the groundwater sample collected from Monitor Well MW-1 was 2.380 mg/L.

September 2012

- **Benzene –** The NNPDWR drinking water quality standard for benzene is 0.005 milligrams per liter (mg/L). The concentration of benzene found in the groundwater sample collected from Monitor Well MW-1 was 0.941 mg/L.

- **Ethylbenzene –** The NNPDWR drinking water quality standard for ethylbenzene is 0.7 milligrams per liter (mg/L). The concentration of ethylbenzene found in the groundwater sample collected from Monitor Well MW-1 was 0.785 mg/L.

- **Toluene –** The NNPDWR drinking water quality standard for toluene is 1.0 milligrams per liter (mg/L). The concentration of benzene found in the groundwater sample collected from Monitor Well MW-1 was 3.51 mg/L.

January 2013

- **Benzene –** The NNPDWR drinking water quality standard for benzene is 0.005 milligrams per liter (mg/L). The concentration of benzene found in the groundwater sample collected from Monitor Well MW-1 was 0.125 mg/L.

- **Toluene –** The NNPDWR drinking water quality standard for toluene is 1.0 milligrams per liter (mg/L). The concentration of benzene found in the groundwater sample collected from Monitor Well MW-1 was 1.14 mg/L.

The corresponding laboratory analytical reports are included in **Appendix B**. A historical laboratory analytical summary is available as **Table 3**. Site maps showing the concentration of benzene present in groundwater are included as **Figures 7, 8, 9,** and **10**. A hydrograph showing benzene concentrations vs. groundwater levels over time in MW-1 is included as **Figure 11**.

3.0 CONCLUSIONS AND RECOMMENDATIONS

Groundwater samples collected from MW-1 have continually exceeded NNPDWR drinking water quality standards for benzene from June 2008 to January 2013 and have intermittently exceeded the standards for toluene and ethylbenzene.

Based on historical groundwater quality data, groundwater samples collected from MW-3 and MW-4 have never exceeded NNPDWR drinking water quality standards for BTEX constituents during sampling conducted from June 2008 to January 2013. Groundwater samples collected from MW-2 have not exceeded the NNPDWR standards for BTEX constituents since the September 2008 sampling event, when benzene was detected above the standard.

Due to intermittent presence of a hydrocarbon sheen, Tetra Tech placed an oil absorbent sock in MW-1 during the September 2010 monitoring event. The sock has been changed periodically and maintained in the well since that time.

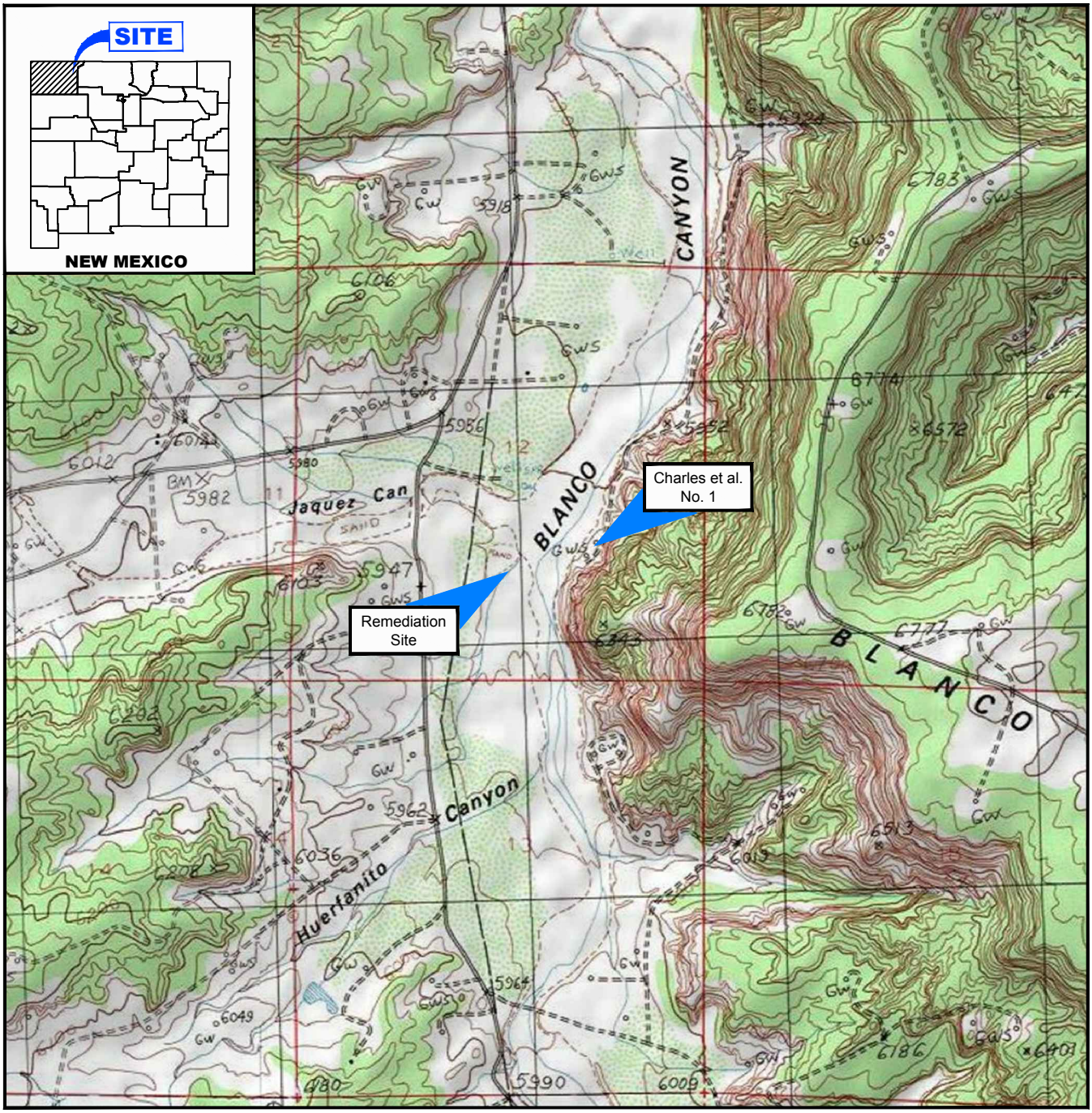
CRA recommends continued quarterly groundwater sampling at the Site. Remediation Site closure will be requested when groundwater analytical results indicate that all monitored groundwater quality parameters are consistently below NNPDWR drinking water quality standards.

4.0 REFERENCES

Envirotech Incorporated (2009). *June 2009 Groundwater Monitoring Report.* Prepared for ConocoPhillips. Report Dated August 2009.

State of New Mexico Energy Minerals and Natural Resources Form C-141 (2003). *Release Notification and Corrective Action.* Dated June 30, 2008.

FIGURES



SOURCE: USGS 7.5 MINUTE QUAD
"FRESNO CANYON, NEW MEXICO"

N

0 1000 2000ft

Figure 1

SITE VICINITY MAP
CHARLES et al. No. 1
SEC 12 36.5860050 N, -107.740131 W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

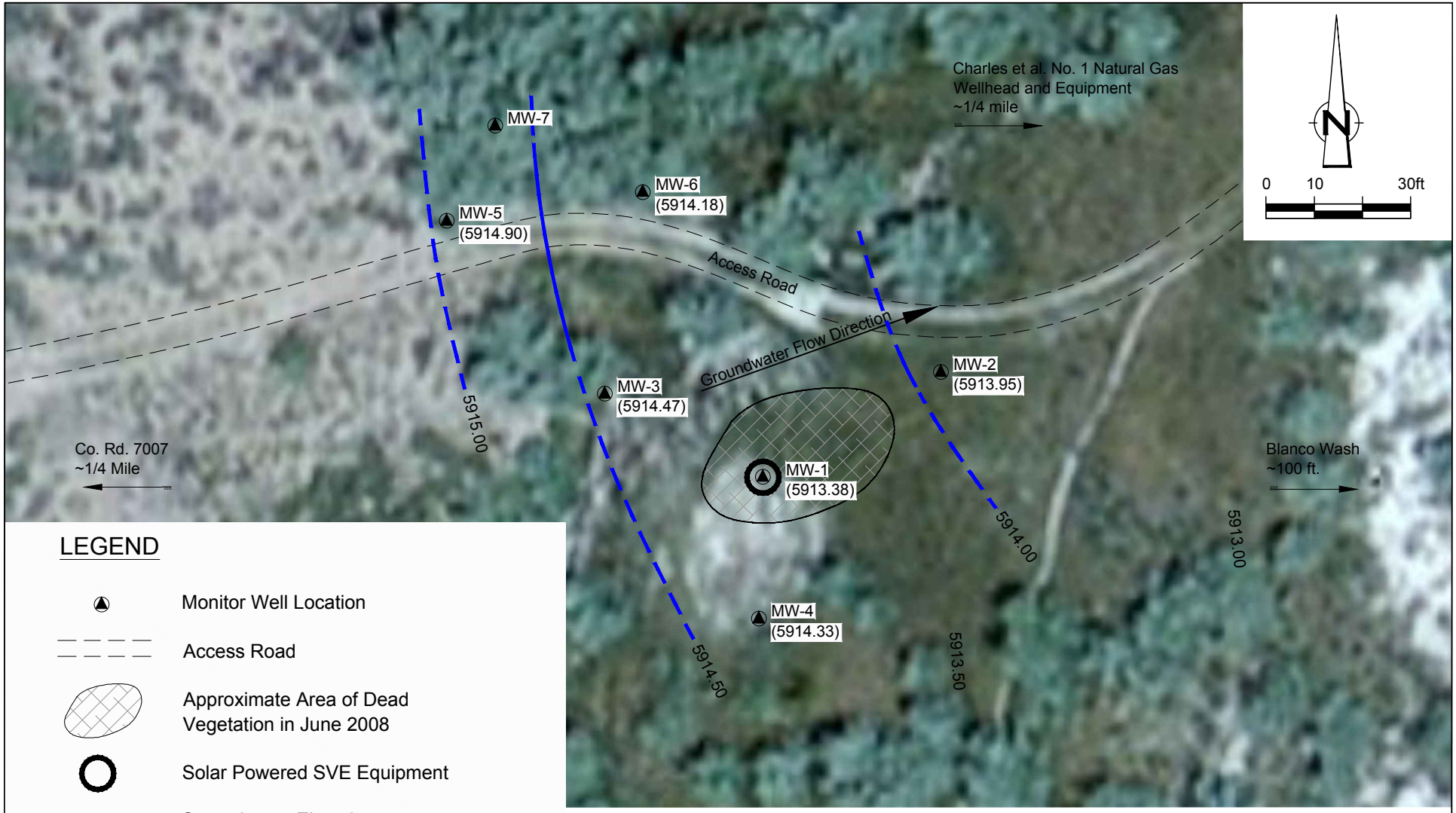
074935-95(004)GN-DL004_Topo MAR 16/2012

Adapted from Tetratech, Inc. figure,
"Site Layout Map"

Figure 2

SITE PLAN
CHARLES et al. No. 1
SEC 12, T27N-R9W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074935-95(004)GN-DL001_SD MAR 16/2012



LEGEND

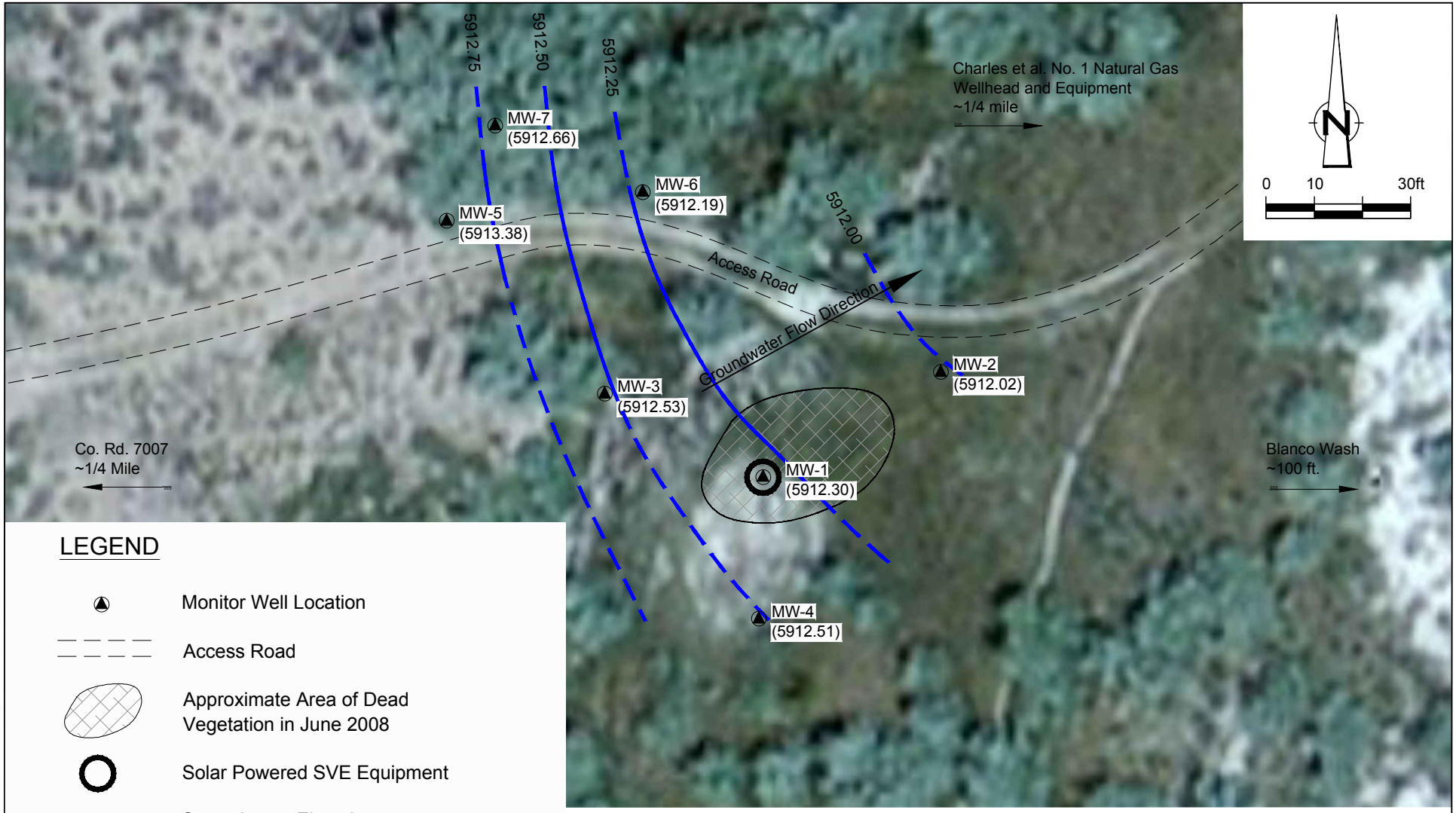
- Monitor Well Location
- Access Road
- Approximate Area of Dead Vegetation in June 2008
- Solar Powered SVE Equipment
- (5914.33) Groundwater Elevation
- 5915.0 Groundwater Elevation Contour
- Groundwater Flow Direction

Adapted from Tetratech, Inc. figure, "Site Layout Map"

Figure 3

MARCH 2012 GROUNDWATER POTENTIOMETRIC SURFACE MAP
CHARLES et al. No. 1
SEC 12, T27N-R9W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074935-95(004)GN-DL002_GG JUL 30/2012



LEGEND

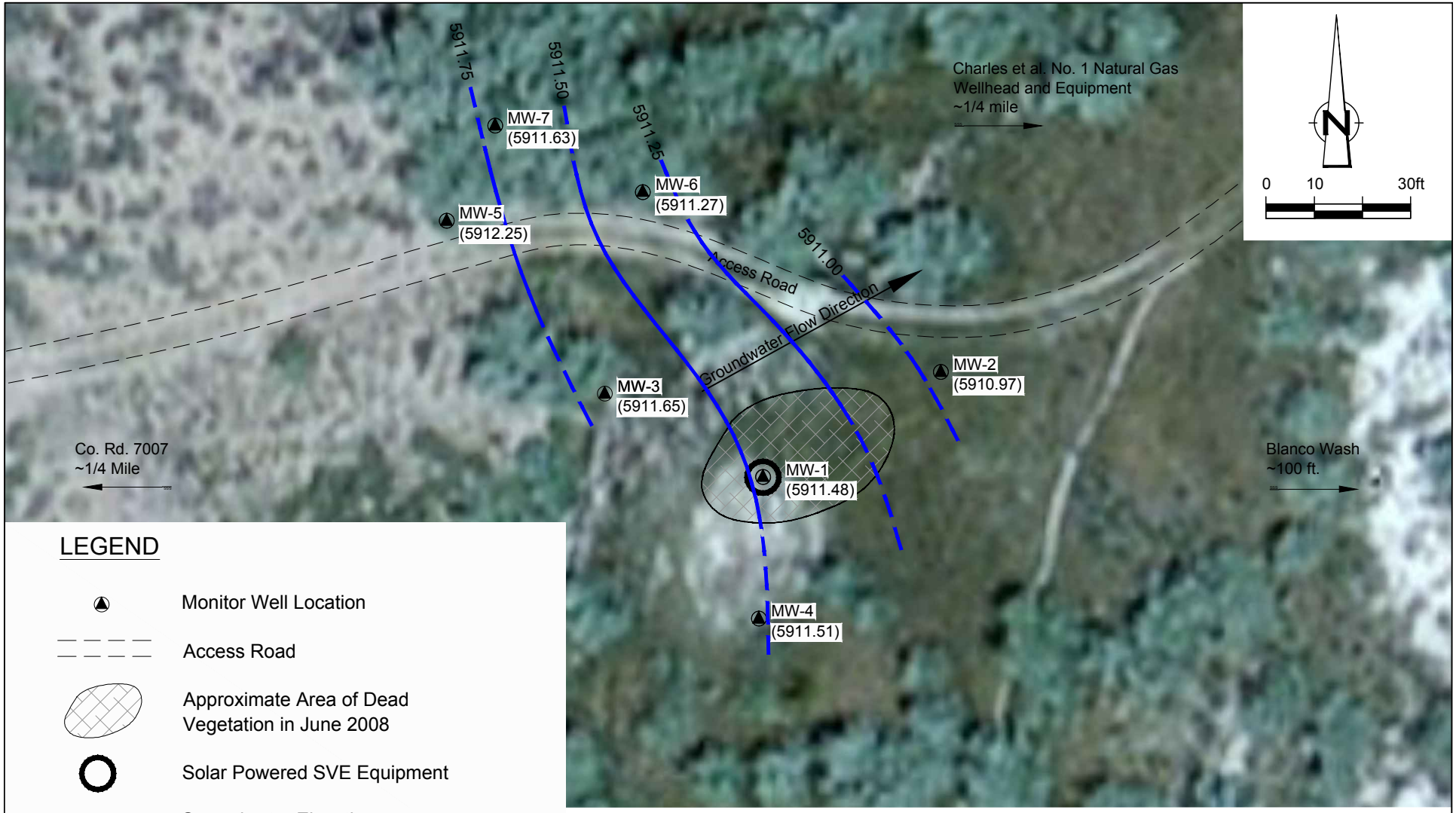
- Monitor Well Location
- Access Road
- Approximate Area of Dead Vegetation in June 2008
- Solar Powered SVE Equipment
- (5912.51) Groundwater Elevation
- 5914.6 Groundwater Elevation Contour
- Groundwater Flow Direction

Adapted from Tetratech, Inc. figure, "Site Layout Map"

Figure 4

JUNE 2012 GROUNDWATER POTENTIOMETRIC SURFACE MAP
CHARLES et al. NO. 1
SEC 12, T27N-R9W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074935-95(004)GN-DL002_GG JUL 30/2012



LEGEND

- Monitor Well Location
- Access Road
- Approximate Area of Dead Vegetation in June 2008
- Solar Powered SVE Equipment
- (5911.51) Groundwater Elevation
- 5914.6 Groundwater Elevation Contour
- Groundwater Flow Direction

Figure 5

SEPTEMBER 2012 GROUNDWATER POTENTIOMETRIC SURFACE MAP
CHARLES et al. NO. 1
SEC 12, T27N-R9W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

Adapted from Tetratech, Inc. figure, "Site Layout Map"

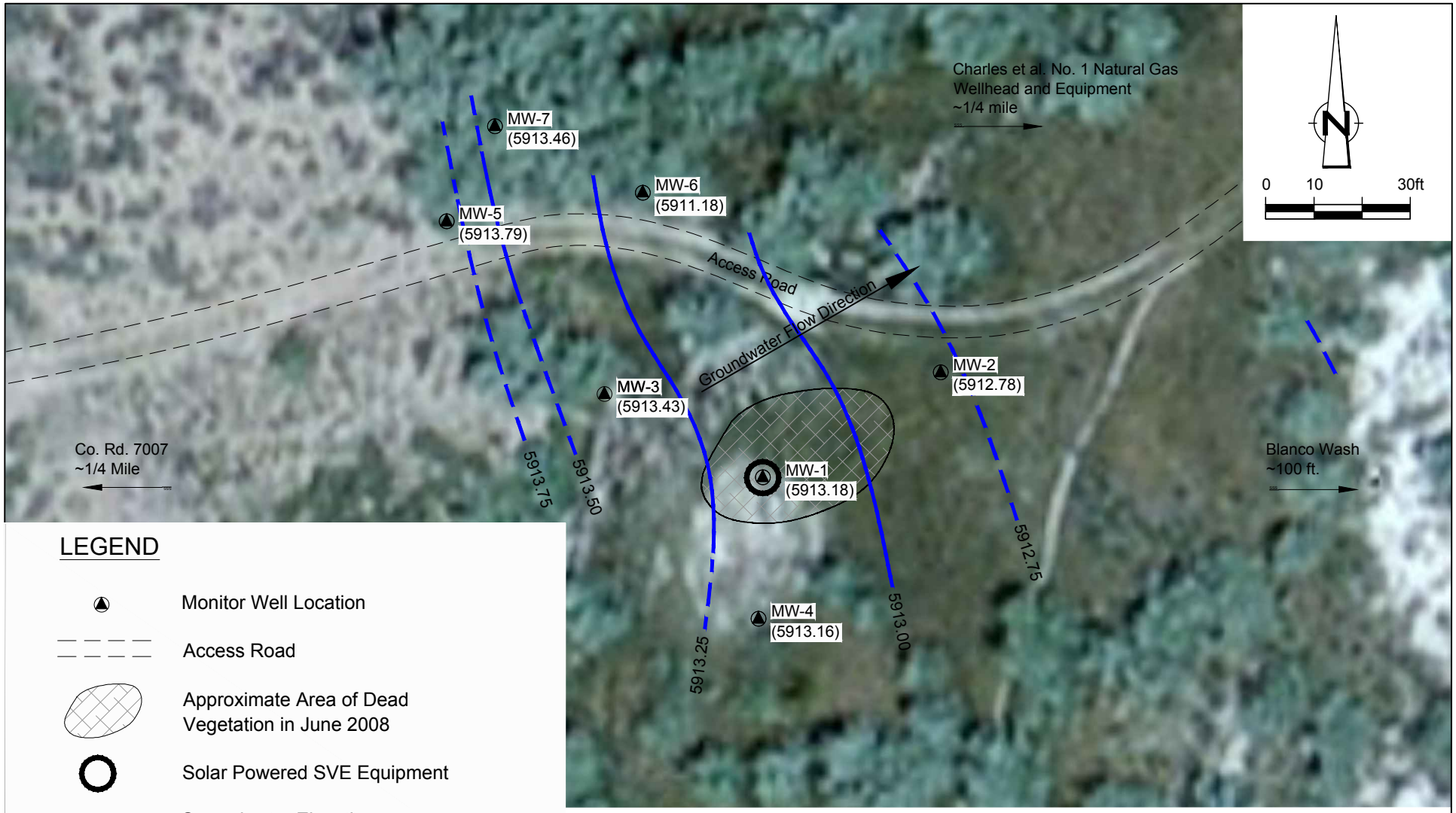
074935-95(004)GN-DL002_GG NOV 2/2012

Adapted from Tetratech, Inc. figure,
"Site Layout Map"

Figure 8

JUNE 2012 BENZENE CONCENTRATION MAP
CHARLES et al. No. 1
SEC 12, T27N,-R9W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074935-95(004)GN-DL003_Benz JUL 30/2012



LEGEND

- Monitor Well Location
- Access Road
- Approximate Area of Dead Vegetation in June 2008
- Solar Powered SVE Equipment
- (5913.16) Groundwater Elevation
- **5913.75** Groundwater Elevation Contour
- Groundwater Flow Direction

Figure 6

JANUARY 2013 GROUNDWATER POTENTIOMETRIC SURFACE MAP
CHARLES et al. NO. 1
SEC 12, T27N-R9W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

CRA

Adapted from Tetratech, Inc. figure,
"Site Layout Map"

074935-95(004)GN-DL002_GG MAR 7/2013

Adapted from Tetratech, Inc. figure,
"Site Layout Map"

Figure 7

MARCH 2012 BENZENE CONCENTRATION MAP
CHARLES et al. No. 1
SEC 12, T27N,-R9W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074935-95(004)GN-DL003_Benz JUL 27/2012

Adapted from Tetratech, Inc. figure,
"Site Layout Map"

Figure 9

SEPTEMBER 2012 BENZENE CONCENTRATION MAP
CHARLES et al. No. 1
SEC 12, T27N,-R9W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074935-95(004)GN-DL003_Benz NOV 2/2012

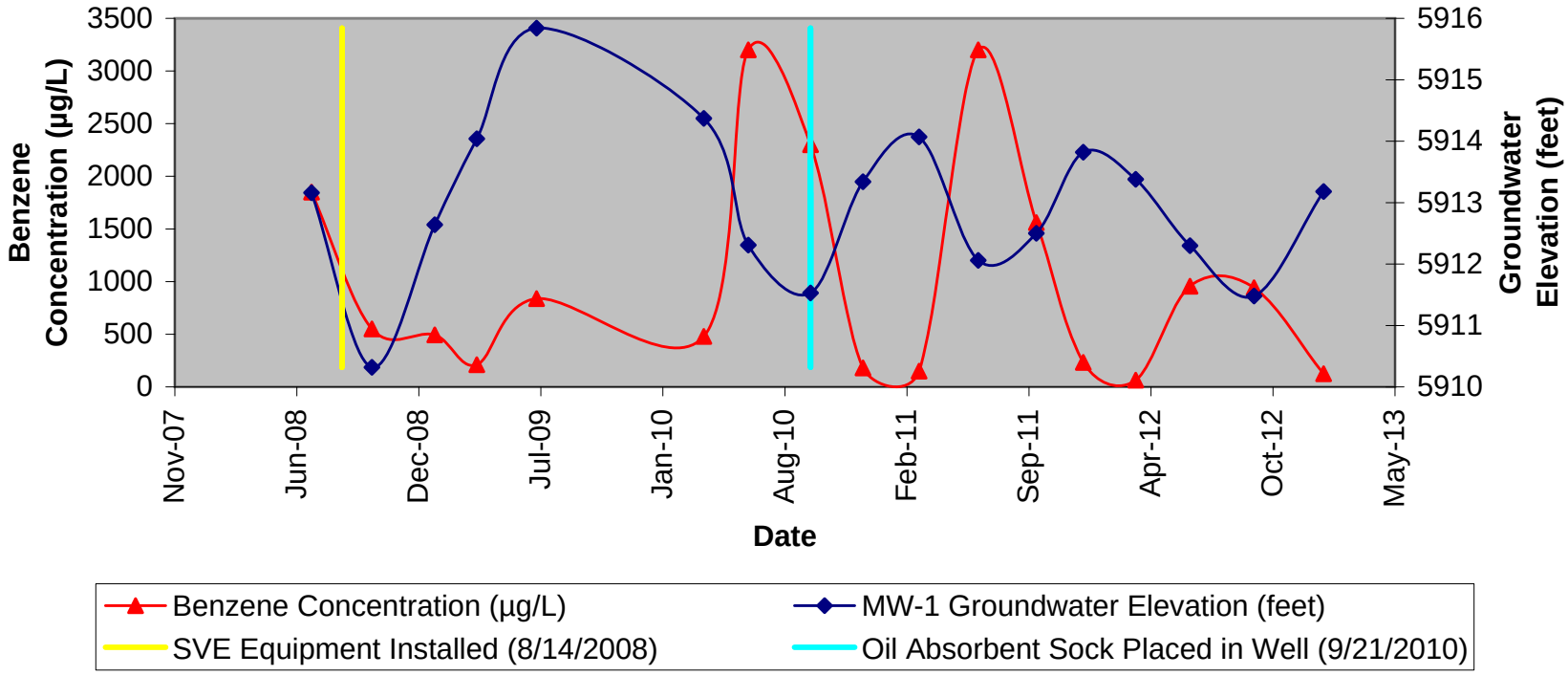
Adapted from Tetratech, Inc. figure,
"Site Layout Map"

Figure 10

JANUARY 2013 BENZENE CONCENTRATION MAP
CHARLES et al. No. 1
SEC 12, T27N,-R9W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074935-95(004)GN-DL003_Benz MAR 7/2013

Figure 11. ConocoPhillips Charles et al. No. 1 Benzene Concentration vs. Groundwater Elevation Over Time in MW-1



TABLES

TABLE 1

SITE HISTORICAL TIMELINE
CONOCOPHILLIPS COMPANY
CHARLES ET AL. NO. 1

Date/Time Period	*Event/Action*	*Description/Comments*
April 12, 1965	Well Spudded	Well spudded by Austral Oil Company Inc.
March 30, 1978	Operator Change	Change in operatorship to the Superior Oil Company.
September 1, 1986	Operator Change	Change in operatorship to Mobil Producing TX and NM Inc.
August 1, 1992	Operator Change	Change in operatorship to Meridian Oil Inc, a subsidiary of Burlington Resources.
August 1, 2001	Well Abandoned	Burlington Resources abandons well due to low production.
May 20, 2003	Well Returns to Production	The Charles et al. No. 1 natural gas well returned to production.
March 31, 2006	Operator Change	ConocoPhillips acquires Burlington Resources.
June 23, 2008	Release Discovered	A release was discovered from the pipe running from the wellhead to the meter house; upon walking the pipeline, an area of dead vegetation was also discovered approximately 100 feet from Blanco Wash.
June 24, 2008	Release Reported	ConocoPhillips reported the release to the New Mexico Oil Conservation Division (NMOCD) via phone and email.
June 25-26, 2008	Initial Site Assessment	Envirotech, Inc. of Farmington, NM advances several soil borings and installed piezometers using a hand auger to determine the extent of impact (Envirotech, 2009). Envirotech also installed Monitor Wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, and MW-7; and obtained water level measurements and samples from all of the wells.
August 14, 2008	Soil Vapor Extraction System Installed	Envirotech, Inc. installed solar-powered Soil Vapor Extraction (SVE) equipment over the existing Monitor Well, MW-1; and obtained water level measurements and samples from all of the wells.
October 2, 2008	Groundwater Monitoring	Envirotech, Inc. completed the third round of groundwater sampling.
January 13, 2009	Groundwater Monitoring	Envirotech, Inc. completed the fourth round of groundwater sampling.
March 23, 2009	Groundwater Monitoring	Envirotech, Inc. completed the fifth round of groundwater sampling and recommended sampling only Monitor Wells MW-1, MW-2, MW-3, and MW-4.
June 29, 2009	Groundwater Monitoring	Envirotech, Inc. completed the sixth round of groundwater sampling and recommended drilling additional monitor wells downgradient of MW-2.
March 30, 2010	Groundwater Monitoring	Tetra Tech, Inc. completed quarterly groundwater sampling.
June 11, 2010	Well Abandoned	Charles et al. No. 1 is plugged and abandoned by ConocoPhillips.
June 11, 2010	Groundwater Monitoring	Tetra Tech, Inc. completed quarterly groundwater sampling.
September 21, 2010	Groundwater Monitoring	Tetra Tech, Inc. completed quarterly groundwater sampling. An oil absorbant sock was placed in MW-1.
December 16, 2010	Groundwater Monitoring	Tetra Tech, Inc. completed quarterly groundwater sampling. The benzene level in MW-1 exceeded the Navajo Nation Primary Drinking Water Regulations (NNPDWR) standard. Oil absorbant sock in MW-1 was replaced.
March 18, 2011	Groundwater Monitoring	Tetra Tech, Inc. completed quarterly groundwater sampling. The benzene level in MW-1 exceeded the NNPDWR standard. Oil absorbant sock in MW-1 was replaced.
June 15, 2011	Transfer of Site Consulting Responsibilities	On June 15, 2011, Site consulting responsibilities were transferred from Tetra Tech of Albuquerque, NM to Conestoga-Rovers & Associates (CRA) of Albuquerque, NM.
June 23, 2011	Groundwater Monitoring	CRA completed quarterly groundwater sampling. Benzene and ethylbenzene levels in MW-1 exceeded the NNPDWR standards. Oil absorbant sock in MW-1 was replaced.
September 26, 2011	Groundwater Monitoring	CRA completed quarterly groundwater sampling. Benzene and ethylbenzene levels in MW-1 exceeded the NNPDWR standards. Oil absorbant sock in MW-1 was replaced.
December 12, 2011	Groundwater Monitoring	CRA completed quarterly groundwater sampling. Benzene level in MW-1 exceeded the NNPDWR standard. Oil absorbant sock in MW-1 was replaced.
March 7, 2012	Groundwater Monitoring	CRA completed quarterly groundwater sampling. Benzene level in MW-1 exceeded the NNPDWR standard. Oil absorbant sock in MW-1 was replaced.
June 4, 2012	Groundwater Monitoring	CRA completed quarterly groundwater sampling. Benzene, toluene, and ethylbenzene levels in MW-1 exceeded the NNPDWR standards. Oil absorbant sock in MW-1 was replaced.
September 17, 2012	Groundwater Monitoring	CRA completed quarterly groundwater sampling. Benzene, toluene, and ethylbenzene levels in MW-1 exceeded the NNPDWR standards. Oil absorbant sock in MW-1 was replaced.
January 9, 2013	Groundwater Monitoring	CRA completed quarterly groundwater sampling. Benzene and toluene levels in MW-1 exceeded the NNPDWR standards. Oil absorbant sock in MW-1 was replaced.

TABLE 2

MONITOR WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS
CONOCOPHILLIPS COMPANY
CHARLES ET AL. NO. 1

Well ID	*TOC Elevation* (ft AMSL)*	*Date Measured*	*Depth to Groundwater (ft below TOC)*	*Relative Water Level (ft AMSL)*
MW-1	5917.87	6/25/2008	4.71	5913.16
		8/14/2008	5.21	5912.66
	5917.05	10/2/2008	5.13	5911.92
		1/13/2009	4.41	5912.64
		3/23/2009	3.01	5914.04
		6/29/2009	2.12	5914.93
		3/30/2010	2.68	5914.37
		6/11/2010	4.74	5912.31
		9/21/2010	5.52	5911.53
		12/16/2010	3.71	5913.34
		3/18/2011	2.98	5914.07
		6/23/2011	4.99	5912.06
		9/27/2011	4.55	5912.50
		12/12/2011	3.23	5913.82
		3/7/2012	3.67	5913.38
		6/4/2012	4.75	5912.30
		9/17/2012	5.57	5911.48
		1/9/2013	3.87	5913.18
MW-2	5917.33	6/25/2008	4.66	5912.67
		8/14/2008	5.35	5911.98
	5916.53	10/2/2008	5.12	5911.41
		1/13/2009	3.15	5913.38
		3/23/2009	2.65	5913.88
		6/29/2009	4.20	5912.33
		3/30/2010	2.57	5913.96
		6/11/2010	4.63	5911.90
		9/21/2010	5.53	5911.00
		12/16/2010	3.53	5913.00
		3/18/2011	2.70	5913.83
		6/23/2011	4.80	5911.73
		9/27/2011	4.30	5912.23
		12/12/2011	3.13	5914.20
		3/7/2012	2.58	5913.95
		6/4/2012	4.51	5912.02
		9/17/2012	5.56	5910.97
		1/9/2013	3.75	5912.78
MW-3	5920.57	6/25/2008	7.16	5913.41
		8/14/2008	8.86	5911.71
	5919.8	10/2/2008	7.63	5912.17
		1/13/2009	5.56	5914.24
		3/23/2009	5.56	5914.24
		6/29/2009	1.10	5918.70
		3/30/2010	5.38	5914.42
		6/11/2010	7.44	5912.36
		9/21/2010	8.22	5911.58
		12/16/2010	6.06	5913.74
		3/18/2011	5.42	5914.38
		6/23/2011	7.68	5912.89
		9/27/2011	7.13	5912.67
		12/12/2011	5.78	5914.79
		3/7/2012	5.33	5914.47
		6/4/2012	7.27	5912.53
		9/17/2012	8.15	5911.65
		1/9/2013	6.37	5913.43

TABLE 2

MONITOR WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS
CONOCOPHILLIPS COMPANY
CHARLES ET AL. NO. 1

Well ID	*TOC Elevation* (ft AMSL)*	*Date Measured*	*Depth to Groundwater (ft below TOC)*	*Relative Water Level (ft AMSL)*
MW-4	5920.48	6/25/2008	4.27	5916.21
		8/14/2008	7.89	5912.59
	5919.69	10/2/2008	7.73	5911.96
		1/13/2009	5.94	5913.75
		3/23/2009	5.64	5914.05
		6/29/2009	6.84	5912.85
		3/30/2010	5.40	5914.29
		6/11/2010	7.23	5912.46
		9/21/2010	8.17	5911.52
		12/16/2010	6.24	5913.45
		3/18/2011	5.50	5914.19
		6/23/2011	7.50	5912.19
		9/27/2011	6.98	5912.71
		12/12/2011	5.94	5914.54
		3/7/2012	5.36	5914.33
		6/4/2012	7.18	5912.51
		9/17/2012	8.18	5911.51
		1/9/2013	6.53	5913.16
MW-5	5923.63	6/26/2008	8.23	5915.40
		8/14/2008	8.68	5914.95
	5921.55	10/2/2008	8.70	5912.85
		1/13/2009	6.96	5914.59
		3/23/2009	6.58	5914.97
		6/29/2009	4.10	5917.45
		3/30/2010	NM	NM
		6/11/2010	8.20	5913.35
		9/21/2010	9.25	5912.30
		12/16/2010	7.40	5914.15
		3/18/2011	6.74	5914.81
		6/23/2011	NM	NM
		9/26/2011	8.25	5913.30
		12/12/2011	7.12	5916.51
		3/7/2012	6.65	5914.90
		6/4/2012	8.17	5913.38
		9/17/2012	9.30	5912.25
		1/9/2013	7.76	5913.79
MW-6	5920.68	6/26/2008	6.75	5913.93
		8/14/2008	6.97	5913.71
	5918.64	10/2/2008	6.83	5911.81
		1/13/2009	4.89	5913.75
		3/23/2009	4.12	5914.52
		6/29/2009	1.80	5916.84
		3/30/2010	NM	NM
		6/11/2010	6.63	5912.01
		9/21/2010	7.41	5911.23
		12/16/2010	5.12	5913.52
		3/15/2011	4.49	5914.15
		6/23/2011	6.80	5911.84
		9/26/2011	6.33	5912.31
		12/12/2011	4.84	5915.84
		3/7/2012	4.46	5914.18
		6/4/2012	6.45	5912.19
		9/17/2012	7.37	5911.27
		1/9/2013	5.46	5913.18

TABLE 2

MONITOR WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS
CONOCOPHILLIPS COMPANY
CHARLES ET AL. NO. 1

Well ID	*TOC Elevation* (ft AMSL)*	*Date Measured*	*Depth to Groundwater (ft below TOC)*	*Relative Water Level (ft AMSL)*
MW-7	5920.75	6/26/2008	6.32	5914.43
		8/14/2008	7.17	5913.58
	5918.74	10/2/2008	6.42	5912.32
		1/13/2009	NM	NM
		3/23/2009	4.67	5914.07
		6/29/2009	1.56	5917.18
		3/30/2010	NM	NM
		6/11/2010	NM	NM
		9/21/2010	NM	NM
		12/16/2010	4.91	5913.83
		3/18/2011	DRY (1)	NA
		6/23/2011	6.55	5912.19
		9/26/2011	6.14	5912.60
		12/12/2011	DRY (1)	NA
		3/7/2012	DRY (1)	NA
		6/4/2012	6.08	5912.66
		9/17/2012	7.11	5911.63
		1/9/2013	5.28	5913.46

Notes:
1. (1) Indication of well being dry is inconsistent with perviously recorded levels. Will continue to monitor depth to groundwater and total depth to determine a potential cause.
2. ft = feet
3. AMSL = Above mean sea level
4. NA = Not available
5. NM = Not measured
6. Note: Measurements between 6/25/2008 and 6/29/2009 obtained by Envirotech, Inc.

TABLE 3

GROUNDWATER ANALYTICAL RESULTS SUMMARY
CONOCOPHILLIPS COMPANY
CHARLES ET AL. NO. 1

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)
NNPDWR Standards				**0.005**	**1**	**0.7**	**10**
MW-1	MW-1	6/25/2008	(orig)	**1.85**	0.486	**0.971**	0.379
	MW-1	9/25/2008	(orig)	**0.575**	0.66	0.293	1.547
	MW-1	1/13/2009	(orig)	**0.494**	0.581	0.474	3.572
	MW-1	3/23/2009	(orig)	**0.21**	0.311	0.378	1.418
	MW-1	6/29/2009	(orig)	**0.839**	0.107	0.674	3.404
	MW-1	3/30/2010	(orig)	**0.48**	0.11	0.25	1.573
	MW-1	6/11/2010	(orig)	**3.2**	0.45	0.69	4.51
	MW-1	9/21/2010	(orig)	**2.3**	**1.1**	0.25	4.84
	MW-1	12/16/2010	(orig)	**0.18**	0.2	0.25	1.79
	MW-1	3/18/2011	(orig)	**0.15**	0.14	0.16	1.083
	GW-74935-062311-PG04	6/23/2011	(orig)	**3.20**	0.933	**0.972**	5.80
	GW-74935-062311-PG05	6/23/2011	(Duplicate)	**3.38**	**1.45**	**1.06**	6.76
	GW-074935-092611-CM-008	9/26/2011	(orig)	**1.56**	**2.61**	0.624	6.59
	GW-074935-092611-CM-009	9/26/2011	(Duplicate)	**1.57**	**3.02**	**0.756**	7.26
	GW-074935-121211-CB-MW-1	12/12/2011	(orig)	**0.232**	0.947	0.5	3.94
	GW-074935-121211-CB-DUP	12/12/2011	(Duplicate)	**0.244**	0.994	0.58	4.65
	GW-074935-3712-CB-MW-1	3/7/2012	(orig)	**0.0637**	0.366	0.293	2.23
	GW-074935-3712-CB-DUP	3/7/2012	(Duplicate)	**0.0693**	0.416	0.333	2.63
	GW-074935-060412-CB-MW-1	6/4/2012	(orig)	**0.956**	**2.38**	**0.919**	6.71
	GW-074935-060412-CB-DUP	6/4/2012	(Duplicate)	**0.934**	**2.26**	**0.966**	6.36
	GW-074935-091712-CM-MW-1	9/17/2012	(orig)	**0.941**	**3.51**	**0.785**	5.56
	GW-074935-091712-CM-DUP	9/17/2012	(Duplicate)	**0.984**	**3.04**	**0.852**	5.87
	GW-074935-010913-CM-MW-1	1/9/2013	(orig)	**0.125**	**1.14**	0.334	2.44
	GW-074935-010913-CM-DUP	1/9/2013	(Duplicate)	**0.142**	**1.52**	0.438	3.09
MW-2	MW-2	6/25/2008	(orig)	0.0042	0.0046	0.0016	0.0011
	MW-2	9/25/2008	(orig)	**0.0195**	0.0258	0.0051	0.1008
	MW-2	1/13/2009	(orig)	0.0021	0.002	0.0022	0.0281
	MW-2	3/23/2009	(orig)	0.0014	0.0004	0.0006	0.0073
	MW-2	6/29/2009	(orig)	0.0015	<0.0002	0.0002	0.0004
	MW-2	3/30/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-2	6/11/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-2	9/21/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-2	12/16/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-2	3/18/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	GW-74935-062311-PG02	6/23/2011	(orig)	0.00060	< 0.0010	< 0.0010	< 0.0030
	GW-074935-092611-JP-010	9/26/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-121211-CB-MW-2	12/12/2011	(orig)	0.00034	< 0.001	< 0.001	< 0.003
	GW-074935-3712-CB-MW-2	3/7/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-060412-CB-MW-2	6/4/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-091712-CM-MW-2	9/17/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-010913-CM-MW-2	1/9/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003

TABLE 3

GROUNDWATER ANALYTICAL RESULTS SUMMARY
CONOCOPHILLIPS COMPANY
CHARLES ET AL. NO. 1

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)
MW-3	MW-3	6/25/2008	(orig)	ND	ND	ND	ND
	MW-3	9/25/2008	(orig)	ND	0.0023	0.0009	0.0121
	MW-3	1/13/2009	(orig)	ND	ND	ND	ND
	MW-3	3/23/2009	(orig)	<0.0002	0.0002	0.0002	0.0014
	MW-3	6/29/2009	(orig)	<0.0002	0.0017	0.0007	0.0082
	MW-3	3/30/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-3	6/11/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-3	9/21/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-3	12/16/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-3	3/18/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	GW-74935-062311-PG01	6/23/2011	(orig)	< 0.0010	< 0.0010	< 0.0010	< 0.0030
	GW-074935-092611-CM-006	9/26/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-121211-CB-MW-3	12/12/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-3712-CB-MW-3	3/7/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-060412-CB-MW-3	6/4/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-091712-CM-MW-3	9/17/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-010913-CM-MW-3	1/9/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
MW-4	MW-4	6/25/2008	(orig)	0.0038	0.0199	0.0014	0.007
	MW-4	9/25/2008	(orig)	ND	ND	ND	ND
	MW-4	1/13/2009	(orig)	ND	ND	ND	ND
	MW-4	3/23/2009	(orig)	<0.0002	<0.0002	<0.0002	<0.0002
	MW-4	6/29/2009	(orig)	<0.0002	<0.0002	0.0002	0.0029
	MW-4	3/30/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-4	6/11/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-4	9/21/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-4	12/16/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-4	3/18/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	GW-74935-062311-PG03	6/23/2011	(orig)	< 0.0010	< 0.0010	< 0.0010	< 0.0030
	GW-074935-092611-SP-007	9/26/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-121211-CB-MW-4	12/12/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-3712-CB-MW-4	3/7/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-060412-CB-MW-4	6/4/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-010913-CM-MW-4	1/9/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-091712-CM-MW-4	9/17/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003

TABLE 3

GROUNDWATER ANALYTICAL RESULTS SUMMARY
CONOCOPHILLIPS COMPANY
CHARLES ET AL. NO. 1

Well ID	Sample ID	Date	Sample Type	**Benzene (mg/L)**	**Toluene (mg/L)**	**Ethylbenzene (mg/L)**	**Xylenes (total) (mg/L)**
MW-5	MW-5	6/26/2008	(orig)	ND	ND	ND	ND
	MW-5	9/25/2008	(orig)	ND	ND	ND	ND
	MW-5	1/13/2009	(orig)	ND	ND	ND	ND
	MW-5	3/23/2009	(orig)	ND	ND	ND	ND
MW-6	MW-6	6/26/2008	(orig)	ND	ND	ND	ND
	MW-6	9/25/2008	(orig)	ND	ND	ND	ND
	MW-6	1/13/2009	(orig)	ND	ND	ND	ND
	MW-6	3/23/2009	(orig)	ND	ND	ND	ND
MW-7	MW-7	6/26/2008	(orig)	ND	ND	ND	ND
	MW-7	9/25/2008	(orig)	ND	ND	ND	ND
	MW-7	3/23/2009	(orig)	ND	ND	ND	ND

Notes:
1. MW = monitor well
2. ND = Not Detected
3. NNPDWR = Navajo Nation Primary Drinking Water Regulations
4. mg/L = milligrams per liter (parts per million)
5. < 1.0 = Below laboratory detection limit of 1.0 mg/L
6. **Bold** = concentrations that exceed the NNEPA limits
7. Analytes sampled between 6/25/2008 and 6/29/2009 obtained by Envirotech, Inc.

APPENDICES

APPENDIX A

2012

QUARTERLY GROUNDWATER SAMPLING FIELD FORMS

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Charles ET41 JOB# 074935

SAMPLE ID: GW-074935-3712-CB-MW-1 WELL# MW-1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
3.7.12	3.7.12	1145	0.59	2.0

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 3.67 (feet) WELL ELEVATION 5917.05 (feet)

WELL DEPTH 7.34 (feet) GROUNDWATER ELEVATION 5913.38 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: black ODOR: strong hydrocarbon COLOR: black SHEEN Y/N continuous

WEATHER CONDITIONS: TEMPERATURE ~50° WIND Y/N PRECIPITATION Y/N (IF Y TYPE)

SPECIFIC COMMENTS:

3.67 x .16 = 0.59 x 3 = 1.76

No field parameters taken due to sheen.

Pup @ 1150

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

3.7.12 Jason Moss

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Charles of 41 **JOB#** 074935

SAMPLE ID: GW-074935-3712-CB-MW-2 **WELL#** MW-2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
3.7.12	3.7.12	1210	0.39	1.5

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	—	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 2.58 (feet) WELL ELEVATION 5916.53 (feet)

WELL DEPTH 5.00 (feet) GROUNDWATER ELEVATION 5913.95 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
3.50 (°C)	6.53 (std)	2.426 (g/L)	2202 (µS/cm)	-60.8 (mV)	1.0 (gal)
3.25 (°C)	6.73 (std)	2.899 (g/L)	2596 (µS/cm)	-52.9 (mV)	1.25 (gal)
2.95 (°C)	6.72 (std)	2.941 (g/L)	2620 (µS/cm)	-58.8 (mV)	1.5 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: — COLOR: green/gray SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE ~50° WINDY (Y)/N PRECIPITATION Y/(N) IF Y TYPE)

SPECIFIC COMMENTS:

2.42 x .16 = .3872 x 3 = 1.16

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

3.7.12 Jason Moss

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

ATE/PROJECT NAME: Charles et al JOB# 074935

SAMPLE ID: GW-074935-3.7.12-CB-MW-3 WELL# MW-3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
3.7.12	3.7.12	1120	0.82	3.5

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	—	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 5.33 (feet) WELL ELEVATION 5919.80 (feet)

WELL DEPTH 10.45 (feet) GROUNDWATER ELEVATION 5914.47 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
6.31 (°C)	6.21 (std)	2.890 (g/L)	2879 (µS/cm)	126.1 (mV)	3.0 (gal)
6.30 (°C)	6.26 (std)	2.922 (g/L)	2876 (µS/cm)	105.6 (mV)	3.25 (gal)
6.13 (°C)	6.33 (std)	2.934 (g/L)	2889 (µS/cm)	86.2 (mV)	3.5 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: (N) COLOR: gray SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE ~50° WINDY (Y)/N PRECIPITATION Y/(N) (IF Y TYPE)

SPECIFIC COMMENTS:

0.82 x 3 = 2.46

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

3.7.12 Jason Hicks

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

ITE/PROJECT NAME: Charles et Al **JOB#** 074935

SAMPLE ID: GW-074935-3712-CB-MW-4 **WELL#** MW-4

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
3.7.12	3.7.12	1200	0.81	2.75

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE) SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER: 5.36 (feet) WELL ELEVATION: 5919.69 (feet)

WELL DEPTH: 10.40 (feet) GROUNDWATER ELEVATION: 5914.33 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
3.15 (°C)	6.95 (std)	3.792 (g/L)	3397 (µS/cm)	-22.0 (mV)	2.0 (gal)
3.17 (°C)	6.68 (std)	3.819 (g/L)	3432 (µS/cm)	-31.1 (mV)	2.25 (gal)
3.23 (°C)	6.65 (std)	3.946 (g/L)	3457 (µS/cm)	-36.3 (mV)	2.5 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: black, cleared after 1 volume ODOR: NO COLOR: black - None SHEEN Y/N: None

WEATHER CONDITIONS: TEMPERATURE WINDY Y/N: Y PRECIPITATION Y/N (IF Y TYPE): N

SPECIFIC COMMENTS:

5.04 x 0.16 = 0.806 x3 = 2.42

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS.

DATE	PRINT	SIGNATURE
3.7.12	Cassie Braun	Cassie Braun

WELL SAMPLING FIELD INFORMATION FORM

TE/PROJECT NAME: Charles et al **JOB#** 074935
SAMPLE ID: GW-074935-060412-CB-MW-1 **WELL#** MW-1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
6·3·12	6·4·12	1350	0.41	1.5

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.........DEDICATED (Y) N (CIRCLE ONE) SAMPLING EQUIPMENT.........DEDICATED (Y) N (CIRCLE ONE)

		Options			
PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= ____ PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= ____ SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= ____ PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= ____ SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= ____ PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= ____ SAMPLING TUBING OTHER (SPECIFY)

FILTERING DEVICES 0.45 [✓] A - IN-LINE DISPOSABLE B - PRESSURE C - VACUUM

FIELD MEASUREMENTS

DEPTH TO WATER 4.75 (feet) WELL ELEVATION 5917.05 (feet)
WELL DEPTH 7.32 (feet) GROUNDWATER ELEVATION 5912.30 (feet)

TEMPERATURE (°C)	pH (std)	TDS (g/L)	CONDUCTIVITY (µS/cm)	ORP (mV)	VOLUME (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: black ODOR: strong hydrocarbon COLOR: black SHEEN (Y)/N Continuous
WEATHER CONDITIONS: TEMPERATURE ~90° WINDY Y/(N) PRECIPITATION Y/(N) (IF Y TYPE)
SPECIFIC COMMENTS:
2.57 x .16 = 0.41 x 3 = (1.23) Dup @ 1355
No parameters due to sheen

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 6·3·12 PRINT Cassie Brown SIGNATURE Cassie Brown

WELL SAMPLING FIELD INFORMATION FORM

TE/PROJECT NAME: Charles et al **JOB#** 074935

SAMPLE ID: GW-074935-060412-CB-MW-2 **WELL#** MW-2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
6.4.12	6.4.12	1345	0.47	1.0

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y (N) (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	—	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER	4.51	(feet)	WELL ELEVATION	5916.53	(feet)
WELL DEPTH	7.99	(feet)	GROUNDWATER ELEVATION	5912.02	(feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
11.94 (°C)	6.80 (std)	2.956 (g/L)	3358 (µS/cm)	-166.7 (mV)	0.75 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: green/black and cloudy ODOR: None COLOR: green/black SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE ~90° WINDY Y/(N) PRECIPITATION Y/(N) (IF Y TYPE)

SPECIFIC COMMENTS:

2.98 x .16 = 0.47 x 3 = 1.43

bailed dry @ 0.5

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE	PRINT	SIGNATURE
6.4.12	Carrie Braun	Carrie Braun

WELL SAMPLING FIELD INFORMATION FORM

TE/PROJECT NAME: Charles et al **JOB#** 074935

SAMPLE ID: GW-074935-060412-CB-MW3 **WELL#** MW-3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
6-4-12	6-4-12	1315	0.50	1.75

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.........DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.........DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= ______ PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= ______ SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= ______ PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= ______ SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= ______ PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= ______ SAMPLING TUBING OTHER (SPECIFY)

FILTERING DEVICES 0.45 [—] A - IN-LINE DISPOSABLE B - PRESSURE C - VACUUM

FIELD MEASUREMENTS

DEPTH TO WATER 7.27 (feet) WELL ELEVATION 5919.80 (feet)

WELL DEPTH 10.40 (feet) GROUNDWATER ELEVATION 5912.53 (feet)

TEMPERATURE (°C)	pH (std)	TDS (g/L)	CONDUCTIVITY (µS/cm)	ORP (mV)	VOLUME (gal)
10.48	6.60	2.295	2547	-81.3	0.75
10.49	6.58	2.288	2543	-79.9	1.25
10.48	6.60	2.289	2544	-79.6	1.5

FIELD COMMENTS

SAMPLE APPEARANCE: gry, bio ODOR: bio COLOR: black SHEEN Y/N N

WEATHER CONDITIONS: TEMPERATURE 90 WINDY Y/N N PRECIPITATION Y/N (IF Y TYPE) N

SPECIFIC COMMENTS:

3.13 x .16 = 0.50 x 3 = 1.5

bailed dry @ 0.50

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE: 6-4-12 PRINT: Cassie Brown SIGNATURE: Cassie Brown

WELL SAMPLING FIELD INFORMATION FORM

ITE/PROJECT NAME: Charles et. al **JOB#** 074935

SAMPLE ID: GW-074935-060412-CB-MW-4 **WELL#** MW-4

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
6.4.12	6.4.12	13:25	0.51	1.5

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.........DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.........DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= ____ PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= ____ SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= ____ PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= ____ SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= ____ PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= ____ SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	✓	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 7.18 (feet) WELL ELEVATION 5919.69 (feet)

WELL DEPTH 10.39 (feet) GROUNDWATER ELEVATION 5912.51 (feet)

TEMPERATURE (°C)	pH (std)	TDS (g/L)	CONDUCTIVITY (µS/cm)	ORP (mV)	VOLUME (gal)
9.91	6.97	2.389	2617	-65.7	1.0
9.92	6.89	2.317	2539	-109.2	1.25
9.97	6.87	2.237	2553	-109.1	1.5

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: no/slight COLOR: gray SHEEN Y/N N

WEATHER CONDITIONS: TEMPERATURE 90 WINDY Y/(N) PRECIPITATION Y/(N) (IF Y TYPE)

SPECIFIC COMMENTS:

3.21 x .16 = 0.51 x 3 = (1.53)

bailed dry @ 0.75 - good recharge

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 6.4.12 PRINT Cassie Brown SIGNATURE Cassie Brown

WELL SAMPLING FIELD INFORMATION FORM

TE/PROJECT NAME: Charles Et al No. 1 JOB# 074935

SAMPLE ID: GW-074935-9172-CM-MW-1 WELL# MW-1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
9.17.12	9.17.12	1105	0.28	0.75

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	—	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 5.57 (feet) WELL ELEVATION 5917.05 (feet)

WELL DEPTH 7.30 (feet) GROUNDWATER ELEVATION 5911.48 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
16.6 (°C)	5.91 (std)	2.045 (g/L)	2641 (µS/cm)	-382.0 (mV)	.5 (gal)
16.91 (°C)	6.00 (std)	2.059 (g/L)	2677 (µS/cm)	-399.7 (mV)	.75 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: black ODOR: hydrocarbon COLOR: black SHEEN Y/N Yes, spotty, slight

WEATHER CONDITIONS: TEMPERATURE ~80° WINDY Y/(N) PRECIPITATION Y/(N) (IF Y TYPE)

SPECIFIC COMMENTS:

Vol X3 = 0.83

Bailed dry after ~0.4 gal

Dup @ 1110

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

9.17.12 Jason Hess

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Charles Et-1 No. 1 **JOB#** 074935

SAMPLE ID: GW-074935-91712-CM-MW-2 **WELL#** MW-2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
9.17.12	9.17.12	1130	0.30	1.0

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	N/A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 5.56 (feet) WELL ELEVATION 5916.53 (feet)

WELL DEPTH 7.43 (feet) GROUNDWATER ELEVATION 5910.97 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: slightly cloudy ODOR: bio COLOR: clear SHEEN Y/N

WEATHER CONDITIONS: TEMPERATURE 75° WINDY Y/N PRECIPITATION Y/N (IF Y TYPE)

SPECIFIC COMMENTS:

Vol x3 = 0.90 No parameters due to low volume & slow recharge.

Bailed dry after 0.5 gal

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

9-17-12 DATE Christine Mateus PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

TE/PROJECT NAME: Charles Et al No 1 JOB# 074935

SAMPLE ID: GW-074935-91712-CM-MW-3 WELL# MW-3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
9.17.12	9.17.12	1045	0.36	1.25

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 8.15 (feet) WELL ELEVATION 5919.80 (feet)

WELL DEPTH 10.37 (feet) GROUNDWATER ELEVATION 5911.65 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
16.65 (°C)	5.73 (std)	2.593 (g/L)	3187 (µS/cm)	-62.6 (mV)	0.75 (gal)
15.57 (°C)	5.71 (std)	2.498 (g/L)	3152 (µS/cm)	-63.7 (mV)	1.0 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: bio COLOR: gray/brown SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE ~75 WINDY Y/(N) PRECIPITATION Y/(N) (IF Y TYPE)

SPECIFIC COMMENTS:

Vol x 3 = 1.07

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

9.17.12 DATE | Jason Ploss PRINT | SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

TE/PROJECT NAME: Charles Etal No. 1 JOB# 074935

SAMPLE ID: GW-074935-091712-CM-MW-4 WELL# MW-4

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
091712	091712	1115	0.35	1.10

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 8.18 (feet) WELL ELEVATION 5919.69 (feet)

WELL DEPTH 10.37 (feet) GROUNDWATER ELEVATION 5911.51 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
13.42 (°C)	6.30 (std)	1.921 (g/L)	2303 (µS/cm)	-232.0 (mV)	.75 (gal)
13.63 (°C)	6.14 (std)	1.915 (g/L)	2307 (µS/cm)	-207.8 (mV)	.95 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: slightly cloudy COLOR: Brown COLOR: clear SHEEN Y (N)

WEATHER CONDITIONS: TEMPERATURE 75° WINDY Y/N (N) PRECIPITATION Y/N (IF Y TYPE) (N)

SPECIFIC COMMENTS:

Volume x 3 = 1.05

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

9-17-12 DATE | Christine Mathews PRINT | SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Charles et al. No. 1 **JOB#** 074935

SAMPLE ID: GW-074935-010913-CM-MW-1 **WELL#** MW-1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
1-9-13	1-9-13	1040	0.549	1.75

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	N/A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 3.67 (feet) WELL ELEVATION 5917.05 (feet)

WELL DEPTH 7.30 (feet) GROUNDWATER ELEVATION 5913.18 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
3.43 (°C)	7.40 (std)	2.902 (g/L)	2626 (µS/cm)	259.9 (mV)	1.0 (gal)
3.27 (°C)	7.39 (std)	2.901 (g/L)	2611 (µS/cm)	258.7 (mV)	1.25 (gal)
3.22 (°C)	7.34 (std)	2.895 (g/L)	2598 (µS/cm)	266.1 (mV)	1.50 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy/particulates ODOR: hydrocarbon COLOR: dark gray SHEEN Y/N yes - spotty

WEATHER CONDITIONS: TEMPERATURE 30° WINDY Y/N NO PRECIPITATION Y/N (IF Y TYPE) snow on ground

SPECIFIC COMMENTS:

Dup @ 1050

0.549 x 3 = 1.646

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

1-9-13 (DATE) Christine Matteus (PRINT) Christine Matteus (SIGNATURE)

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Charles et al No. 1 JOB# 074935

SAMPLE ID: GW-074935-010913-CM-MW-2 WELL# MW-2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
1-9-13	1-9-13	1105	0.60	1.75

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y (N) (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	N/A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 3.75 (feet) WELL ELEVATION 5916.53 (feet)

WELL DEPTH 7.50 (feet) GROUNDWATER ELEVATION 5912.78 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
4.42 (°C)	7.27 (std)	2.427 (g/L)	2267 (µS/cm)	-116.1 (mV)	1.0 (gal)
4.64 (°C)	7.33 (std)	2.421 (g/L)	2276 (µS/cm)	-116.3 (mV)	1.25 (gal)
4.85 (°C)	7.29 (std)	2.540 (g/L)	2409 (µS/cm)	-146.4 (mV)	1.75 (gal)
	(std)	(g/L)	(µS/cm)	(mV)	(gal)
	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: none COLOR: brown SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 30° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) snow on ground

SPECIFIC COMMENTS:

0.60 x 3 = 1.80

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

1-9-13 Christine Matheus [signature]

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Charles et al No.1 JOB# 074935

SAMPLE ID: SW-074935-010913-cm-mw-3 WELL# MW-3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
1-9-13	1-9-13	1015	0.6432	2.0

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	N/A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 6.37 (feet) WELL ELEVATION 5919.80 (feet)

WELL DEPTH 10.59 (feet) GROUNDWATER ELEVATION 5913.43 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
4.89 (°C)	7.12 (std)	2.233 (g/L)	2116 (µS/cm)	-53.4 (mV)	1.25 (gal)
4.92 (°C)	7.09 (std)	2.249 (g/L)	2135 (µS/cm)	-32.7 (mV)	1.50 (gal)
4.97 (°C)	7.07 (std)	2.252 (g/L)	2141 (µS/cm)	-33.9 (mV)	1.75 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: none COLOR: brown SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 30° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) snow on ground

SPECIFIC COMMENTS:

0.6432 X 3 = 1.9296

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

1-9-13 Christine Matthews Christine Matthews

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Charles et al No.1 JOB# 074935

SAMPLE ID: GW-074935-01013-CM-MW-4 WELL# MW-4

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
1-9-13	1-9-13	1000	0.616	2.0

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	N/A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 6.53 (feet) WELL ELEVATION 5919.69 (feet)

WELL DEPTH 10.38 (feet) GROUNDWATER ELEVATION 5913.16 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
5.23 (°C)	7.28 (std)	2.009 (g/L)	1924 (µS/cm)	-46.2 (mV)	1.25 (gal)
5.10 (°C)	7.26 (std)	2.012 (g/L)	1976 (µS/cm)	-45.1 (mV)	1.50 (gal)
5.04 (°C)	7.22 (std)	2.150 (g/L)	2051 (µS/cm)	-42.2 (mV)	1.75 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: none COLOR: brown SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 30° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) snow on ground

SPECIFIC COMMENTS:

0.616 x 3 = 1.85

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

1-9-13 Christine Mathews [signature]

DATE PRINT SIGNATURE

APPENDIX B

2012

QUARTERLY GROUNDWATER LABORATORY ANALYTICAL REPORTS

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

March 22, 2012

Christine Matthews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: CHARLES ET AL NO. 1 (074935)
Pace Project No.: 60117002

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on March 10, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Tracy

alice.tracy@pacelabs.com
Project Manager

Enclosures

cc: Kelly Blanchard, COP Conestoga-Rovers & Associa
Angela Bown, COP Conestoga-Rovers & Associa

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CERTIFICATIONS

Project: CHARLES ET AL NO. 1 (074935)
Pace Project No.: 60117002

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 05-008-0
Illinois Certification #: 001191
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-08-TX
Utah Certification #: 9135995665

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SAMPLE SUMMARY

Project: CHARLES ET AL NO. 1 (074935)
Pace Project No.: 60117002

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60117002001	**GW-074935-3712-CB-MW-1**	Water	03/07/12 11:45	03/10/12 09:00
60117002002	**GW-074935-3712-CB-MW-2**	Water	03/07/12 12:10	03/10/12 09:00
60117002003	**GW-074935-3712-CB-MW-3**	Water	03/07/12 11:20	03/10/12 09:00
60117002004	**GW-074935-3712-CB-MW-4**	Water	03/07/12 12:00	03/10/12 09:00
60117002005	**GW-074935-3712-CB-DUP**	Water	03/07/12 11:50	03/10/12 09:00
60117002006	**TRIP BLANK**	Water	03/07/12 17:00	03/10/12 09:00

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SAMPLE ANALYTE COUNT

Project: CHARLES ET AL NO. 1 (074935)
Pace Project No.: 60117002

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60117002001	**GW-074935-3712-CB-MW-1**	EPA 8260	RNS	9
60117002002	**GW-074935-3712-CB-MW-2**	EPA 8260	RNS	9
60117002003	**GW-074935-3712-CB-MW-3**	EPA 8260	RNS	9
60117002004	**GW-074935-3712-CB-MW-4**	EPA 8260	RNS	9
60117002005	**GW-074935-3712-CB-DUP**	EPA 8260	RNS	9
60117002006	**TRIP BLANK**	EPA 8260	RNS	9

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PROJECT NARRATIVE

Project: CHARLES ET AL NO. 1 (074935)
Pace Project No.: 60117002

Method: **EPA 8260**
Description: 8260 MSV UST, Water
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 22, 2012

General Information:
6 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/44313

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: MSV/44313

B: Analyte was detected in the associated method blank.

- GW-074935-3712-CB-DUP (Lab ID: 60117002005)
  - Toluene
- GW-074935-3712-CB-MW-1 (Lab ID: 60117002001)
  - Toluene
- TRIP BLANK (Lab ID: 60117002006)
  - Toluene

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PROJECT NARRATIVE

Project: CHARLES ET AL NO. 1 (074935)
Pace Project No.: 60117002

Method: **EPA 8260**
Description: 8260 MSV UST, Water
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 22, 2012

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: CHARLES ET AL NO. 1 (074935)
Pace Project No.: 60117002

Sample: GW-074935-3712-CB-MW-1 **Lab ID: 60117002001** Collected: 03/07/12 11:45 Received: 03/10/12 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	**63.7**	ug/L	10.0	0.40	10		03/21/12 11:14	71-43-2	
Ethylbenzene	**293**	ug/L	10.0	1.0	10		03/21/12 11:14	100-41-4	
Toluene	**366**	ug/L	10.0	1.0	10		03/21/12 11:14	108-88-3	B
Xylene (Total)	**2230**	ug/L	30.0	3.0	10		03/21/12 11:14	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	97	%	86-112		10		03/21/12 11:14	1868-53-7	
Toluene-d8 (S)	100	%	90-110		10		03/21/12 11:14	2037-26-5	
4-Bromofluorobenzene (S)	100	%	87-113		10		03/21/12 11:14	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	82-119		10		03/21/12 11:14	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	10		03/21/12 11:14		

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ANALYTICAL RESULTS

Project: CHARLES ET AL NO. 1 (074935)
Pace Project No.: 60117002

Sample: GW-074935-3712-CB-MW-2 **Lab ID: 60117002002** Collected: 03/07/12 12:10 Received: 03/10/12 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.040	1		03/21/12 11:31	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.10	1		03/21/12 11:31	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/21/12 11:31	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.30	1		03/21/12 11:31	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	98	%	86-112		1		03/21/12 11:31	1868-53-7	
Toluene-d8 (S)	101	%	90-110		1		03/21/12 11:31	2037-26-5	
4-Bromofluorobenzene (S)	100	%	87-113		1		03/21/12 11:31	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	82-119		1		03/21/12 11:31	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		03/21/12 11:31		

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ANALYTICAL RESULTS

Project: CHARLES ET AL NO. 1 (074935)
Pace Project No.: 60117002

Sample: GW-074935-3712-CB-MW-3 **Lab ID: 60117002003** Collected: 03/07/12 11:20 Received: 03/10/12 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.040	1		03/21/12 11:49	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.10	1		03/21/12 11:49	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/21/12 11:49	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.30	1		03/21/12 11:49	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	96	%	86-112		1		03/21/12 11:49	1868-53-7	
Toluene-d8 (S)	99	%	90-110		1		03/21/12 11:49	2037-26-5	
4-Bromofluorobenzene (S)	104	%	87-113		1		03/21/12 11:49	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	82-119		1		03/21/12 11:49	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		03/21/12 11:49		

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ANALYTICAL RESULTS

Project: CHARLES ET AL NO. 1 (074935)
Pace Project No.: 60117002

Sample: GW-074935-3712-CB-MW-4 **Lab ID: 60117002004** Collected: 03/07/12 12:00 Received: 03/10/12 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.040	1		03/21/12 12:06	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.10	1		03/21/12 12:06	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/21/12 12:06	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.30	1		03/21/12 12:06	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	98	%	86-112		1		03/21/12 12:06	1868-53-7	
Toluene-d8 (S)	99	%	90-110		1		03/21/12 12:06	2037-26-5	
4-Bromofluorobenzene (S)	100	%	87-113		1		03/21/12 12:06	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	82-119		1		03/21/12 12:06	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		03/21/12 12:06		

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ANALYTICAL RESULTS

Project: CHARLES ET AL NO. 1 (074935)
Pace Project No.: 60117002

Sample: GW-074935-3712-CB-DUP **Lab ID: 60117002005** Collected: 03/07/12 11:50 Received: 03/10/12 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	**69.3**	ug/L	10.0	0.40	10		03/21/12 12:24	71-43-2	
Ethylbenzene	**333**	ug/L	10.0	1.0	10		03/21/12 12:24	100-41-4	
Toluene	**416**	ug/L	10.0	1.0	10		03/21/12 12:24	108-88-3	B
Xylene (Total)	**2630**	ug/L	30.0	3.0	10		03/21/12 12:24	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	97	%	86-112		10		03/21/12 12:24	1868-53-7	
Toluene-d8 (S)	100	%	90-110		10		03/21/12 12:24	2037-26-5	
4-Bromofluorobenzene (S)	103	%	87-113		10		03/21/12 12:24	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	82-119		10		03/21/12 12:24	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	10		03/21/12 12:24		

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ANALYTICAL RESULTS

Project: CHARLES ET AL NO. 1 (074935)
Pace Project No.: 60117002

Sample: TRIP BLANK **Lab ID: 60117002006** Collected: 03/07/12 17:00 Received: 03/10/12 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.040	1		03/21/12 12:41	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.10	1		03/21/12 12:41	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/21/12 12:41	108-88-3	B
Xylene (Total)	ND	ug/L	3.0	0.30	1		03/21/12 12:41	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	96	%	86-112		1		03/21/12 12:41	1868-53-7	
Toluene-d8 (S)	98	%	90-110		1		03/21/12 12:41	2037-26-5	
4-Bromofluorobenzene (S)	102	%	87-113		1		03/21/12 12:41	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	82-119		1		03/21/12 12:41	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		03/21/12 12:41		

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QUALITY CONTROL DATA

Project: CHARLES ET AL NO. 1 (074935)
Pace Project No.: 60117002

QC Batch: MSV/44313 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60117002001, 60117002002, 60117002003, 60117002004, 60117002005, 60117002006

METHOD BLANK: 967865 Matrix: Water
Associated Lab Samples: 60117002001, 60117002002, 60117002003, 60117002004, 60117002005, 60117002006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	03/21/12 10:21	
Ethylbenzene	ug/L	ND	1.0	03/21/12 10:21	
Toluene	ug/L	ND	1.0	03/21/12 10:21	
Xylene (Total)	ug/L	ND	3.0	03/21/12 10:21	
1,2-Dichloroethane-d4 (S)	%	95	82-119	03/21/12 10:21	
4-Bromofluorobenzene (S)	%	102	87-113	03/21/12 10:21	
Dibromofluoromethane (S)	%	96	86-112	03/21/12 10:21	
Toluene-d8 (S)	%	98	90-110	03/21/12 10:21	

LABORATORY CONTROL SAMPLE: 967866

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	21.2	106	82-117	
Ethylbenzene	ug/L	20	21.8	109	79-121	
Toluene	ug/L	20	21.3	107	80-120	
Xylene (Total)	ug/L	60	68.1	113	79-120	
1,2-Dichloroethane-d4 (S)	%			92	82-119	
4-Bromofluorobenzene (S)	%			100	87-113	
Dibromofluoromethane (S)	%			96	86-112	
Toluene-d8 (S)	%			98	90-110	

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QUALIFIERS

Project: CHARLES ET AL NO. 1 (074935)
Pace Project No.: 60117002

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

BATCH QUALIFIERS

Batch: MSV/44313

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CHARLES ET AL NO. 1 (074935)
Pace Project No.: 60117002

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60117002001	**GW-074935-3712-CB-MW-1**	EPA 8260	MSV/44313		
60117002002	**GW-074935-3712-CB-MW-2**	EPA 8260	MSV/44313		
60117002003	**GW-074935-3712-CB-MW-3**	EPA 8260	MSV/44313		
60117002004	**GW-074935-3712-CB-MW-4**	EPA 8260	MSV/44313		
60117002005	**GW-074935-3712-CB-DUP**	EPA 8260	MSV/44313		
60117002006	**TRIP BLANK**	EPA 8260	MSV/44313		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A — **Required** Client Information:

Company:	COP CRA NM
Address:	6121 Indian School Rd NE, Ste 200
	Albequerque, NM 87110
Email To:	cmathews@craworld.com
Phone: (505)884-0672	Fax: (505)884-4932
Requested Due Date/TAT:	standard

Section B — **Required** Project Information:

Report To:	Christine Mathews
Copy To:	Kelly Blanchard, Angela Bown
Purchase Order No.:	4515860232
Project Name:	Charles et al No.1
Project Number:	074935

Section C — Invoice Information:

Attention:	ENFOS
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Alice Tracy
Pace Profile #:	5514, 4

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER NMOCD

Site Location STATE: NM

Section D — **Required** Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	8260 BTEX	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	GW-074935-3712-CB-MW-1	WT	G	—	—	3-7-12	1145		3				X						X		001
2	GW-074935-3712-CB-MW-2	WT	G	—	—	3-7-12	1210		3				X						X		002
3	GW-074935-3712-CB-MW-3	WT	G	—	—	3-7-12	1120		3				X						X		003
4	GW-074935-3712-CB-MW-4	WT	G	—	—	3-7-12	1200		3				X						X		004
5	GW-074935-3712-CB-dup	WT	G	—	—	3-7-12	1150		3				X						X		005
6	trip blank	WT	—	—	—	3-8-12	1700		3				X						X		006
7																					
8																					
9																					
10																					
11																					
12																					

2D G9H

RV 3-10-12

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Cassie Brown/CRA	3-8-12	1730	Alice Tracy	3-10-12	0900	2-7	Y	X	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Cassie Brown

SIGNATURE of SAMPLER: Cassie Brown DATE Signed (MM/DD/YY): 3-8-12

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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Sample Condition Upon Receipt – ESI Tech Specs

Client Name: COP CRA Project #: 60117002

Courier: Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐ _____

Optional
Proj Due Date: 3/22/12
Proj Name:

Tracking #: 898658321821 Pace Shipping Label Used? Yes ☑ No ☐

Custody Seal on Cooler/Box Present: Yes ☐ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☐ _____

Thermometer Used: T-191 / T-194 **Type of Ice:** Wet Blue None (circle one) ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 2-7

Date and initials of person examining contents: RC 3-10-12

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
-Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.
Sample labels match COC:	☑Yes ☐No ☐N/A	
-Includes date/time/ID/analyses Matrix: WT		13.
All containers needing preservation have been checked.	☐Yes ☐No ☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☑Yes ☐No	Initial when completed / Lot # of added preservative
Trip Blank present:	☑Yes ☐No ☐N/A	
Pace Trip Blank lot # (if purchased): 013012-3		15.
Headspace in VOA vials (>6mm):	☐Yes ☒No ☐N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y / (N) Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: AFT Date: 3/12/12

Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps.

Start: 1220	Start:
End: 1223	End:
Temp:	Temp:

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the NCDENR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

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June 15, 2012

Christine Matthews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: CHARLES ET AL NO 1
Pace Project No.: 60122801

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on June 07, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Kelly Blanchard, COP Conestoga-Rovers & Associa
Angela Bown, COP Conestoga-Rovers & Associa

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CERTIFICATIONS

Project: CHARLES ET AL NO 1
Pace Project No.: 60122801

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 05-008-0
Illinois Certification #: 001191
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-08-TX
Utah Certification #: 9135995665

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SAMPLE SUMMARY

Project: CHARLES ET AL NO 1
Pace Project No.: 60122801

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60122801001	**GW-074935-060412-CB-MW-1**	Water	06/04/12 13:50	06/07/12 09:00
60122801002	**GW-074935-060412-CB-MW-2**	Water	06/04/12 13:45	06/07/12 09:00
60122801003	**GW-074935-060412-CB-MW-3**	Water	06/04/12 13:15	06/07/12 09:00
60122801004	**GW-074935-060412-CB-MW-4**	Water	06/04/12 13:25	06/07/12 09:00
60122801005	**GW-074935-060412-CB-MW-DUP**	Water	06/04/12 13:55	06/07/12 09:00
60122801006	**TRIP BLANK**	Water	06/04/12 00:00	06/07/12 09:00

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SAMPLE ANALYTE COUNT

Project: CHARLES ET AL NO 1
Pace Project No.: 60122801

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60122801001	**GW-074935-060412-CB-MW-1**	EPA 8260	PRG	9
60122801002	**GW-074935-060412-CB-MW-2**	EPA 8260	PRG	9
60122801003	**GW-074935-060412-CB-MW-3**	EPA 8260	PRG	9
60122801004	**GW-074935-060412-CB-MW-4**	EPA 8260	PRG	9
60122801005	**GW-074935-060412-CB-MW-DUP**	EPA 8260	PRG	9
60122801006	**TRIP BLANK**	EPA 8260	PRG	9

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PROJECT NARRATIVE

Project: CHARLES ET AL NO 1
Pace Project No.: 60122801

Method: **EPA 8260**
Description: 8260 MSV UST, Water
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: June 15, 2012

General Information:
6 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/46219

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: MSV/46307

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: CHARLES ET AL NO 1
Pace Project No.: 60122801

Sample: GW-074935-060412-CB-MW-1 **Lab ID: 60122801001** Collected: 06/04/12 13:50 Received: 06/07/12 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	**956**	ug/L	10.0	0.50	10		06/12/12 05:56	71-43-2	
Ethylbenzene	**919**	ug/L	10.0	0.80	10		06/12/12 05:56	100-41-4	
Toluene	**2380**	ug/L	50.0	3.5	50		06/13/12 16:46	108-88-3	
Xylene (Total)	**6710**	ug/L	150	9.0	50		06/13/12 16:46	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	103	%	86-112		10		06/12/12 05:56	1868-53-7	
Toluene-d8 (S)	99	%	90-110		10		06/12/12 05:56	2037-26-5	
4-Bromofluorobenzene (S)	104	%	87-113		10		06/12/12 05:56	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	82-119		10		06/12/12 05:56	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	10		06/12/12 05:56		

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ANALYTICAL RESULTS

Project: CHARLES ET AL NO 1
Pace Project No.: 60122801

Sample: GW-074935-060412-CB-MW-2 **Lab ID: 60122801002** Collected: 06/04/12 13:45 Received: 06/07/12 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.050	1		06/12/12 06:10	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.080	1		06/12/12 06:10	100-41-4	
Toluene	ND	ug/L	1.0	0.070	1		06/12/12 06:10	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.18	1		06/13/12 17:00	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	104	%	86-112		1		06/12/12 06:10	1868-53-7	
Toluene-d8 (S)	98	%	90-110		1		06/12/12 06:10	2037-26-5	
4-Bromofluorobenzene (S)	104	%	87-113		1		06/12/12 06:10	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	82-119		1		06/12/12 06:10	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		06/12/12 06:10		

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ANALYTICAL RESULTS

Project: CHARLES ET AL NO 1
Pace Project No.: 60122801

Sample: GW-074935-060412-CB-MW-3 **Lab ID: 60122801003** Collected: 06/04/12 13:15 Received: 06/07/12 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.050	1		06/12/12 06:24	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.080	1		06/12/12 06:24	100-41-4	
Toluene	ND	ug/L	1.0	0.070	1		06/12/12 06:24	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.18	1		06/12/12 06:24	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	105	%	86-112		1		06/12/12 06:24	1868-53-7	
Toluene-d8 (S)	97	%	90-110		1		06/12/12 06:24	2037-26-5	
4-Bromofluorobenzene (S)	102	%	87-113		1		06/12/12 06:24	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	82-119		1		06/12/12 06:24	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		06/12/12 06:24		

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ANALYTICAL RESULTS

Project: CHARLES ET AL NO 1
Pace Project No.: 60122801

Sample: GW-074935-060412-CB-MW-4 **Lab ID: 60122801004** Collected: 06/04/12 13:25 Received: 06/07/12 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.050	1		06/12/12 06:39	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.080	1		06/12/12 06:39	100-41-4	
Toluene	ND	ug/L	1.0	0.070	1		06/12/12 06:39	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.18	1		06/12/12 06:39	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	105	%	86-112		1		06/12/12 06:39	1868-53-7	
Toluene-d8 (S)	99	%	90-110		1		06/12/12 06:39	2037-26-5	
4-Bromofluorobenzene (S)	103	%	87-113		1		06/12/12 06:39	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	82-119		1		06/12/12 06:39	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		06/12/12 06:39		

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ANALYTICAL RESULTS

Project: CHARLES ET AL NO 1
Pace Project No.: 60122801

Sample: GW-074935-060412-CB-MW-DUP **Lab ID: 60122801005** Collected: 06/04/12 13:55 Received: 06/07/12 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	**934**	ug/L	10.0	0.50	10		06/12/12 06:53	71-43-2	
Ethylbenzene	**966**	ug/L	10.0	0.80	10		06/12/12 06:53	100-41-4	
Toluene	**2260**	ug/L	50.0	3.5	50		06/13/12 17:14	108-88-3	
Xylene (Total)	**6360**	ug/L	150	9.0	50		06/13/12 17:14	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	102	%	86-112		10		06/12/12 06:53	1868-53-7	
Toluene-d8 (S)	103	%	90-110		10		06/12/12 06:53	2037-26-5	
4-Bromofluorobenzene (S)	107	%	87-113		10		06/12/12 06:53	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	82-119		10		06/12/12 06:53	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	10		06/12/12 06:53		

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ANALYTICAL RESULTS

Project: CHARLES ET AL NO 1
Pace Project No.: 60122801

Sample: TRIP BLANK **Lab ID: 60122801006** Collected: 06/04/12 00:00 Received: 06/07/12 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.050	1		06/12/12 07:08	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.080	1		06/12/12 07:08	100-41-4	
Toluene	ND	ug/L	1.0	0.070	1		06/12/12 07:08	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.18	1		06/13/12 15:48	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	105	%	86-112		1		06/12/12 07:08	1868-53-7	
Toluene-d8 (S)	99	%	90-110		1		06/12/12 07:08	2037-26-5	
4-Bromofluorobenzene (S)	103	%	87-113		1		06/12/12 07:08	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	82-119		1		06/12/12 07:08	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		06/12/12 07:08		

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QUALITY CONTROL DATA

Project: CHARLES ET AL NO 1
Pace Project No.: 60122801

QC Batch: MSV/46219 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60122801001, 60122801002, 60122801003, 60122801004, 60122801005, 60122801006

METHOD BLANK: 1012030 Matrix: Water
Associated Lab Samples: 60122801001, 60122801002, 60122801003, 60122801004, 60122801005, 60122801006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	06/12/12 03:32	
Ethylbenzene	ug/L	ND	1.0	06/12/12 03:32	
Toluene	ug/L	ND	1.0	06/12/12 03:32	
Xylene (Total)	ug/L	ND	3.0	06/12/12 03:32	
1,2-Dichloroethane-d4 (S)	%	96	82-119	06/12/12 03:32	
4-Bromofluorobenzene (S)	%	101	87-113	06/12/12 03:32	
Dibromofluoromethane (S)	%	100	86-112	06/12/12 03:32	
Toluene-d8 (S)	%	100	90-110	06/12/12 03:32	

LABORATORY CONTROL SAMPLE: 1012031

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	20.8	104	82-117	
Ethylbenzene	ug/L	20	20.5	102	79-121	
Toluene	ug/L	20	21.2	106	80-120	
Xylene (Total)	ug/L	60	60.9	101	79-120	
1,2-Dichloroethane-d4 (S)	%			102	82-119	
4-Bromofluorobenzene (S)	%			100	87-113	
Dibromofluoromethane (S)	%			106	86-112	
Toluene-d8 (S)	%			102	90-110	

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QUALITY CONTROL DATA

Project: CHARLES ET AL NO 1
Pace Project No.: 60122801

QC Batch: MSV/46307 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60122801001, 60122801002, 60122801005, 60122801006

METHOD BLANK: 1013449 Matrix: Water
Associated Lab Samples: 60122801001, 60122801002, 60122801005, 60122801006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Toluene	ug/L	ND	1.0	06/13/12 15:34	
Xylene (Total)	ug/L	ND	3.0	06/13/12 15:34	
1,2-Dichloroethane-d4 (S)	%	98	82-119	06/13/12 15:34	
4-Bromofluorobenzene (S)	%	101	87-113	06/13/12 15:34	
Dibromofluoromethane (S)	%	99	86-112	06/13/12 15:34	
Toluene-d8 (S)	%	101	90-110	06/13/12 15:34	

LABORATORY CONTROL SAMPLE: 1013450

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Toluene	ug/L	20	20.7	103	80-120	
Xylene (Total)	ug/L	60	61.9	103	79-120	
1,2-Dichloroethane-d4 (S)	%			102	82-119	
4-Bromofluorobenzene (S)	%			102	87-113	
Dibromofluoromethane (S)	%			103	86-112	
Toluene-d8 (S)	%			98	90-110	

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QUALIFIERS

Project: CHARLES ET AL NO 1
Pace Project No.: 60122801

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: MSV/46219

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/46307

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CHARLES ET AL NO 1
Pace Project No.: 60122801

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60122801001	**GW-074935-060412-CB-MW-1**	EPA 8260	MSV/46219		
60122801001	**GW-074935-060412-CB-MW-1**	EPA 8260	MSV/46307		
60122801002	**GW-074935-060412-CB-MW-2**	EPA 8260	MSV/46219		
60122801002	**GW-074935-060412-CB-MW-2**	EPA 8260	MSV/46307		
60122801003	**GW-074935-060412-CB-MW-3**	EPA 8260	MSV/46219		
60122801004	**GW-074935-060412-CB-MW-4**	EPA 8260	MSV/46219		
60122801005	**GW-074935-060412-CB-MW-DUP**	EPA 8260	MSV/46219		
60122801005	**GW-074935-060412-CB-MW-DUP**	EPA 8260	MSV/46307		
60122801006	**TRIP BLANK**	EPA 8260	MSV/46219		
60122801006	**TRIP BLANK**	EPA 8260	MSV/46307		

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Sample Condition Upon Receipt – ESI Tech Specs

Client Name: COP CRA N/M Project #: 60122801

Courier: Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐ _____

Optional
Proj Due Date: 6/19
Proj Name:

Tracking #: 8993 9001 6529 Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☐ _____

Thermometer Used: T-193 / T-194 **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2·2

Date and initials of person examining contents: DWS 6/7/12 1050

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
-Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.
Sample labels match COC:	☑Yes ☐No ☐N/A	
-Includes date/time/ID/analyses Matrix: water		13.
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒Yes ☐No	Initial when completed: N/A Lot # of added preservative:
Trip Blank present:	☐Yes ☐No ☑N/A	
Pace Trip Blank lot # (if purchased): N/A		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
		16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y / (N) Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: AMF Date: 6/8/12

Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps.

Start:	1041	Start:	
End:	1050	End:	
Temp:		Temp:	

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the NCDENR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A — **Required** Client Information:

Company	COP CRA NM
Address	6121 Indian School Rd NE, Ste 200
	Albequerque, NM 87110
Email To	cmathews@craworld.com
Phone: (505)884-0672	Fax: (505)884-4932
Requested Due Date/TAT:	standard

Section B — **Required** Project Information:

Report To:	Christine Mathews
Copy To:	Kelly Blanchard, Angela Bown
Purchase Order No.:	4515860232
Project Name:	Charles et al No.1
Project Number:	074935

Section C — Invoice Information:

Attention:	ENFOS
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Alice Tracy
Pace Profile #:	5514, 4

REGULATORY AGENCY

☐ NPDES ☒ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: NM

Section D — **Required** Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	8260 BTEX	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	GW·074935·060412·CB·MW-1	WT	G	—	—	6/4/12	1350		3				X						X		30122801 (91H) a01
2	GW·074935·060412·CB·MW-2	WT	G	—	—	6/4/12	1345		3				X						X		a02
3	GW·074935·060412·CB·MW-3	WT	G	—	—	6/4/12	1315		3				X						X		a03
4	GW·074935·060412·CB·MW-4	WT	G	—	—	6/4/12	1325		3				X						X		a04
5	GW·074935·060412·CB·dup	WT	G	—	—	6/4/12	1355		3				X						X		a05
6	TRIP blank	—	—	—	—	6/6/12	0900		3				X						X		a06
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Cassie Brown/CRA	6/6/12	0900	[signature]	6/7/12	900	2.2	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Cassie Brown

SIGNATURE of SAMPLER: Cassie Brown

DATE Signed (MM/DD/YY): 06/06/12

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

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September 27, 2012

Christine Matthews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: 074935 Charles et al No. 1
Pace Project No.: 60129273

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on September 19, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Kelly Blanchard, COP Conestoga-Rovers & Associa
Angela Bown, COP Conestoga-Rovers & Associa
Cassie Brown, COP Conestoga-Rovers & Associa

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CERTIFICATIONS

Project: 074935 Charles et al No. 1
Pace Project No.: 60129273

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 12-019-0
Illinois Certification #: 002885
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-12-3
Utah Certification #: KS000212012-2

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SAMPLE SUMMARY

Project: 074935 Charles et al No. 1
Pace Project No.: 60129273

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60129273001	**GW-074935-091712-CM-MW-3**	Water	09/17/12 10:45	09/19/12 08:00
60129273002	**GW-074935-091712-CM-MW-1**	Water	09/17/12 11:05	09/19/12 08:00
60129273003	**GW-074935-091712-CM-DUP**	Water	09/17/12 11:10	09/19/12 08:00
60129273004	**GW-074935-091712-CM-MW-4**	Water	09/17/12 11:15	09/19/12 08:00
60129273005	**GW-074935-091712-CM-MW-2**	Water	09/17/12 11:30	09/19/12 08:00
60129273006	**TB-074935-091712-CM-001**	Water	09/17/12 12:00	09/19/12 08:00

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SAMPLE ANALYTE COUNT

Project: 074935 Charles et al No. 1
Pace Project No.: 60129273

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60129273001	**GW-074935-091712-CM-MW-3**	EPA 8260	PRG	9
60129273002	**GW-074935-091712-CM-MW-1**	EPA 8260	PRG	9
60129273003	**GW-074935-091712-CM-DUP**	EPA 8260	JTS, PRG	9
60129273004	**GW-074935-091712-CM-MW-4**	EPA 8260	PRG, RNS	9
60129273005	**GW-074935-091712-CM-MW-2**	EPA 8260	PRG	9
60129273006	**TB-074935-091712-CM-001**	EPA 8260	PRG	9

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PROJECT NARRATIVE

Project: 074935 Charles et al No. 1
Pace Project No.: 60129273

Method: **EPA 8260**
Description: 8260 MSV UST, Water
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: September 27, 2012

General Information:
6 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/48622
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: MSV/48647
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: MSV/48714
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 074935 Charles et al No. 1
Pace Project No.: 60129273

Sample: GW-074935-091712-CM-MW-3 **Lab ID: 60129273001** Collected: 09/17/12 10:45 Received: 09/19/12 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.098	1		09/21/12 06:49	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.23	1		09/21/12 06:49	100-41-4	
Toluene	ND	ug/L	1.0	0.15	1		09/21/12 06:49	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.41	1		09/21/12 06:49	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	104	%	80-120		1		09/21/12 06:49	1868-53-7	
Toluene-d8 (S)	103	%	80-120		1		09/21/12 06:49	2037-26-5	
4-Bromofluorobenzene (S)	99	%	80-120		1		09/21/12 06:49	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	80-120		1		09/21/12 06:49	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		09/21/12 06:49		

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ANALYTICAL RESULTS

Project: 074935 Charles et al No. 1
Pace Project No.: 60129273

Sample: GW-074935-091712-CM-MW-1 **Lab ID: 60129273002** Collected: 09/17/12 11:05 Received: 09/19/12 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	**941**	ug/L	25.0	2.4	25		09/21/12 07:04	71-43-2	
Ethylbenzene	**785**	ug/L	25.0	5.8	25		09/21/12 07:04	100-41-4	
Toluene	**3510**	ug/L	25.0	3.8	25		09/21/12 07:04	108-88-3	
Xylene (Total)	**5560**	ug/L	75.0	10.2	25		09/21/12 07:04	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	104	%	80-120		25		09/21/12 07:04	1868-53-7	
Toluene-d8 (S)	100	%	80-120		25		09/21/12 07:04	2037-26-5	
4-Bromofluorobenzene (S)	98	%	80-120		25		09/21/12 07:04	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	80-120		25		09/21/12 07:04	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	25		09/21/12 07:04		

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ANALYTICAL RESULTS

Project: 074935 Charles et al No. 1
Pace Project No.: 60129273

Sample: GW-074935-091712-CM-DUP **Lab ID: 60129273003** Collected: 09/17/12 11:10 Received: 09/19/12 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	**984**	ug/L	10.0	0.98	10		09/21/12 07:18	71-43-2	
Ethylbenzene	**852**	ug/L	10.0	2.3	10		09/21/12 07:18	100-41-4	
Toluene	**3040**	ug/L	50.0	2.7	50		09/23/12 08:16	108-88-3	
Xylene (Total)	**5870**	ug/L	150	33.5	50		09/23/12 08:16	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	106	%	80-120		10		09/21/12 07:18	1868-53-7	
Toluene-d8 (S)	104	%	80-120		10		09/21/12 07:18	2037-26-5	
4-Bromofluorobenzene (S)	99	%	80-120		10		09/21/12 07:18	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	80-120		10		09/21/12 07:18	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	10		09/21/12 07:18		

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ANALYTICAL RESULTS

Project: 074935 Charles et al No. 1
Pace Project No.: 60129273

Sample: GW-074935-091712-CM-MW-4 **Lab ID: 60129273004** Collected: 09/17/12 11:15 Received: 09/19/12 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.098	1		09/21/12 07:33	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.23	1		09/21/12 07:33	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		09/26/12 05:09	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.30	1		09/26/12 05:09	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	100	%	80-120		1		09/21/12 07:33	1868-53-7	
Toluene-d8 (S)	101	%	80-120		1		09/21/12 07:33	2037-26-5	
4-Bromofluorobenzene (S)	97	%	80-120		1		09/21/12 07:33	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	80-120		1		09/21/12 07:33	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		09/21/12 07:33		

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ANALYTICAL RESULTS

Project: 074935 Charles et al No. 1
Pace Project No.: 60129273

Sample: GW-074935-091712-CM-MW-2 **Lab ID: 60129273005** Collected: 09/17/12 11:30 Received: 09/19/12 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.098	1		09/21/12 07:48	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.23	1		09/21/12 07:48	100-41-4	
Toluene	ND	ug/L	1.0	0.15	1		09/21/12 07:48	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.41	1		09/21/12 07:48	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	111	%	80-120		1		09/21/12 07:48	1868-53-7	
Toluene-d8 (S)	101	%	80-120		1		09/21/12 07:48	2037-26-5	
4-Bromofluorobenzene (S)	98	%	80-120		1		09/21/12 07:48	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	80-120		1		09/21/12 07:48	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		09/21/12 07:48		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074935 Charles et al No. 1
Pace Project No.: 60129273

Sample: TB-074935-091712-CM-001 **Lab ID: 60129273006** Collected: 09/17/12 12:00 Received: 09/19/12 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.098	1		09/21/12 08:03	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.23	1		09/21/12 08:03	100-41-4	
Toluene	ND	ug/L	1.0	0.15	1		09/21/12 08:03	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.41	1		09/21/12 08:03	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	105	%	80-120		1		09/21/12 08:03	1868-53-7	
Toluene-d8 (S)	101	%	80-120		1		09/21/12 08:03	2037-26-5	
4-Bromofluorobenzene (S)	99	%	80-120		1		09/21/12 08:03	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	80-120		1		09/21/12 08:03	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		09/21/12 08:03		

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QUALITY CONTROL DATA

Project: 074935 Charles et al No. 1
Pace Project No.: 60129273

QC Batch: MSV/48622 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60129273001, 60129273002, 60129273003, 60129273004, 60129273005, 60129273006

METHOD BLANK: 1063766 Matrix: Water
Associated Lab Samples: 60129273001, 60129273002, 60129273003, 60129273004, 60129273005, 60129273006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	09/21/12 03:38	
Ethylbenzene	ug/L	ND	1.0	09/21/12 03:38	
Toluene	ug/L	ND	1.0	09/21/12 03:38	
Xylene (Total)	ug/L	ND	3.0	09/21/12 03:38	
1,2-Dichloroethane-d4 (S)	%	106	80-120	09/21/12 03:38	
4-Bromofluorobenzene (S)	%	101	80-120	09/21/12 03:38	
Dibromofluoromethane (S)	%	106	80-120	09/21/12 03:38	
Toluene-d8 (S)	%	102	80-120	09/21/12 03:38	

LABORATORY CONTROL SAMPLE: 1063767

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.9	94	74-123	
Ethylbenzene	ug/L	20	20.7	104	76-123	
Toluene	ug/L	20	20.1	101	75-123	
Xylene (Total)	ug/L	60	62.2	104	76-123	
1,2-Dichloroethane-d4 (S)	%			103	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Dibromofluoromethane (S)	%			110	80-120	
Toluene-d8 (S)	%			104	80-120	

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QUALITY CONTROL DATA

Project: 074935 Charles et al No. 1
Pace Project No.: 60129273

QC Batch: MSV/48647
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60129273003

METHOD BLANK: 1065220 Matrix: Water
Associated Lab Samples: 60129273003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Toluene	ug/L	ND	1.0	09/23/12 03:08	
Xylene (Total)	ug/L	ND	3.0	09/23/12 03:08	
1,2-Dichloroethane-d4 (S)	%	90	80-120	09/23/12 03:08	
4-Bromofluorobenzene (S)	%	102	80-120	09/23/12 03:08	
Dibromofluoromethane (S)	%	100	80-120	09/23/12 03:08	
Toluene-d8 (S)	%	99	80-120	09/23/12 03:08	

LABORATORY CONTROL SAMPLE: 1065221

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Toluene	ug/L	20	18.6	93	75-123	
Xylene (Total)	ug/L	60	54.9	91	76-123	
1,2-Dichloroethane-d4 (S)	%			89	80-120	
4-Bromofluorobenzene (S)	%			98	80-120	
Dibromofluoromethane (S)	%			93	80-120	
Toluene-d8 (S)	%			97	80-120	

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QUALITY CONTROL DATA

Project: 074935 Charles et al No. 1
Pace Project No.: 60129273

QC Batch: MSV/48714
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60129273004

METHOD BLANK: 1066896 Matrix: Water
Associated Lab Samples: 60129273004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Toluene	ug/L	ND	1.0	09/26/12 04:09	
Xylene (Total)	ug/L	ND	3.0	09/26/12 04:09	
1,2-Dichloroethane-d4 (S)	%	86	80-120	09/26/12 04:09	
4-Bromofluorobenzene (S)	%	99	80-120	09/26/12 04:09	
Dibromofluoromethane (S)	%	100	80-120	09/26/12 04:09	
Toluene-d8 (S)	%	100	80-120	09/26/12 04:09	

LABORATORY CONTROL SAMPLE: 1066897

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Toluene	ug/L	20	20.8	104	75-123	
Xylene (Total)	ug/L	60	62.3	104	76-123	
1,2-Dichloroethane-d4 (S)	%			88	80-120	
4-Bromofluorobenzene (S)	%			104	80-120	
Dibromofluoromethane (S)	%			101	80-120	
Toluene-d8 (S)	%			98	80-120	

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QUALIFIERS

Project: 074935 Charles et al No. 1
Pace Project No.: 60129273

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: MSV/48622

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/48647

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/48714

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074935 Charles et al No. 1
Pace Project No.: 60129273

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60129273001	**GW-074935-091712-CM-MW-3**	EPA 8260	MSV/48622		
60129273002	**GW-074935-091712-CM-MW-1**	EPA 8260	MSV/48622		
60129273003	**GW-074935-091712-CM-DUP**	EPA 8260	MSV/48622		
60129273003	**GW-074935-091712-CM-DUP**	EPA 8260	MSV/48647		
60129273004	**GW-074935-091712-CM-MW-4**	EPA 8260	MSV/48622		
60129273004	**GW-074935-091712-CM-MW-4**	EPA 8260	MSV/48714		
60129273005	**GW-074935-091712-CM-MW-2**	EPA 8260	MSV/48622		
60129273006	**TB-074935-091712-CM-001**	EPA 8260	MSV/48622		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company:	COP CRA NM
Address:	6121 Indian School Rd NE, Ste 200
	Albequerque, NM 87110
Email To:	cmathews@craworld.com
Phone:	(505)884-0672
Fax:	(505)884-4932
Requested Due Date/TAT:	standard

Section B Required Project Information:

Report To:	Christine Mathews
Copy To:	Kelly Blanchard, Angela Bown
Purchase Order No.:	4515860232
Project Name:	Charles et al No.1
Project Number:	074935

Section C Invoice Information:

Attention:	ENFOS
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Alice Flanagan
Pace Profile #:	5514, 4

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER ______

Site Location STATE: NM

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Collected: ~~COMPOSITE START~~ GRAB

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start/Grab DATE	COLLECTED Composite Start/Grab TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	8260 BTEX		Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 60129273
1	GW-074935-091712-CM-MW-3	WT	G	9.17.12	1045								X					X	3 Dig H		001
2	GW-074935-091712-CM-MW-1	WT	G	9.17.12	1105								X					X	↓		002
3	GW-074935-091712-CM-DUP	WT	G	9.17.12	1110								X					X	↓		003
4	GW-074935-091712-CM-MW-4	WT	G	9.17.12	1115								X					X	↓		004
5	GW-074935-091712-CM-MW-2	WT	G	9.17.12	1130								X					X	↓		005
6	TB-074935-091712-CM-001	WT		9.17.12	1200								X					X	↓ (TB)		006
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	[signature] / CRA	9.18.12	1630	E Brockett	9/19/12	0800	0.8	Y	Y	Y
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Christine Mathews

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 09.18.12

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days

F-ALL-Q-020rev.08, 12-Oct-2007

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Sample Condition Upon Receipt – ESI Tech Specs

Client Name: COP- CRA NM **Project #:** 60129273

Optional	
Proj Due Date:	10/1
Proj Name:	Charles Ed... No.1

Courier: Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐ ______

Tracking #: 8001 8200 4857 Pace Shipping Label Used? Yes ☑ No ☐

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☑ None ☐ Other ☐ ______

Thermometer Used: T-191 / T-194 **Type of Ice:** Wet Blue None (circle one) ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 0.8

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 9/19/12 [initials]

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
-Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.
Sample labels match COC:	☑Yes ☐No ☐N/A	
-Includes date/time/ID/analyses Matrix: WT		13.
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☑Yes ☐No	Initial when completed / Lot # of added preservative
Trip Blank present:	☑Yes ☐No ☐N/A	
Pace Trip Blank lot # (if purchased): 080612-3		15.
Headspace in VOA vials (>6mm):	☐Yes ☑No ☐N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y / (N) Field Data Required? Y / N

Person Contacted: ______ Date/Time: ______

Comments/ Resolution: ______

Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps.	
Start: 0955	Start:
End: 1000	End:
Temp:	Temp:

Project Manager Review: [signature] Date: 9/19/12

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the NCDENR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

F-KS-C-004-Rev.0, 02February2011

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January 22, 2013

Christine Matthews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: 074935 CHARLES ET AL NO 1
Pace Project No.: 60136701

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on January 10, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Kelly Blanchard, COP Conestoga-Rovers & Associa
Angela Bown, COP Conestoga-Rovers & Associa
Cassie Brown, COP Conestoga-Rovers & Associa
Jason Ploss, COP Conestoga-Rovers & Associa

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CERTIFICATIONS

Project: 074935 CHARLES ET AL NO 1
Pace Project No.: 60136701

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 12-019-0
Illinois Certification #: 002885
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-12-3
Utah Certification #: KS000212012-2

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SAMPLE SUMMARY

Project: 074935 CHARLES ET AL NO 1
Pace Project No.: 60136701

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60136701001	**GW-074935-010913-CM-MW-1**	Water	01/09/13 10:40	01/10/13 08:30
60136701002	**GW-074935-010913-CM-MW-2**	Water	01/09/13 11:05	01/10/13 08:30
60136701003	**GW-074935-010913-CM-MW-3**	Water	01/09/13 10:15	01/10/13 08:30
60136701004	**GW-074935-010913-CM-MW-4**	Water	01/09/13 10:00	01/10/13 08:30
60136701005	**GW-074935-010913-CM-DUP**	Water	01/09/13 10:50	01/10/13 08:30
60136701006	**TB-074935-010913-CM-001**	Water	01/09/13 00:00	01/10/13 08:30

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SAMPLE ANALYTE COUNT

Project: 074935 CHARLES ET AL NO 1
Pace Project No.: 60136701

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60136701001	**GW-074935-010913-CM-MW-1**	EPA 8260	JTK	9
60136701002	**GW-074935-010913-CM-MW-2**	EPA 8260	JTK	9
60136701003	**GW-074935-010913-CM-MW-3**	EPA 8260	JTK	9
60136701004	**GW-074935-010913-CM-MW-4**	EPA 8260	JTK	9
60136701005	**GW-074935-010913-CM-DUP**	EPA 8260	JTK	9
60136701006	**TB-074935-010913-CM-001**	EPA 8260	JTK	9

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PROJECT NARRATIVE

Project: 074935 CHARLES ET AL NO 1
Pace Project No.: 60136701

Method: **EPA 8260**
Description: 8260 MSV UST, Water
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: January 22, 2013

General Information:
6 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/51250

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: MSV/51307

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 074935 CHARLES ET AL NO 1
Pace Project No.: 60136701

Sample: GW-074935-010913-CM-MW-1 **Lab ID: 60136701001** Collected: 01/09/13 10:40 Received: 01/10/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	**125**	ug/L	25.0	3.0	25		01/11/13 20:30	71-43-2	
Ethylbenzene	**334**	ug/L	25.0	1.5	25		01/11/13 20:30	100-41-4	
Toluene	**1140**	ug/L	25.0	1.4	25		01/11/13 20:30	108-88-3	
Xylene (Total)	**2440**	ug/L	75.0	16.8	25		01/11/13 20:30	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	103	%	80-120		25		01/11/13 20:30	1868-53-7	
Toluene-d8 (S)	91	%	80-120		25		01/11/13 20:30	2037-26-5	
4-Bromofluorobenzene (S)	102	%	80-120		25		01/11/13 20:30	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	80-120		25		01/11/13 20:30	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	25		01/11/13 20:30		

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ANALYTICAL RESULTS

Project: 074935 CHARLES ET AL NO 1
Pace Project No.: 60136701

Sample: GW-074935-010913-CM-MW-2 **Lab ID: 60136701002** Collected: 01/09/13 11:05 Received: 01/10/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.12	1		01/11/13 20:46	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.060	1		01/11/13 20:46	100-41-4	
Toluene	ND	ug/L	1.0	0.054	1		01/11/13 20:46	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.67	1		01/11/13 20:46	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	108	%	80-120		1		01/11/13 20:46	1868-53-7	
Toluene-d8 (S)	93	%	80-120		1		01/11/13 20:46	2037-26-5	
4-Bromofluorobenzene (S)	102	%	80-120		1		01/11/13 20:46	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	80-120		1		01/11/13 20:46	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		01/11/13 20:46		

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ANALYTICAL RESULTS

Project: 074935 CHARLES ET AL NO 1
Pace Project No.: 60136701

Sample: GW-074935-010913-CM-MW-3 **Lab ID: 60136701003** Collected: 01/09/13 10:15 Received: 01/10/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.12	1		01/11/13 21:01	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.060	1		01/11/13 21:01	100-41-4	
Toluene	ND	ug/L	1.0	0.054	1		01/11/13 21:01	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.67	1		01/11/13 21:01	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	104	%	80-120		1		01/11/13 21:01	1868-53-7	
Toluene-d8 (S)	94	%	80-120		1		01/11/13 21:01	2037-26-5	
4-Bromofluorobenzene (S)	100	%	80-120		1		01/11/13 21:01	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	80-120		1		01/11/13 21:01	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		01/11/13 21:01		

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ANALYTICAL RESULTS

Project: 074935 CHARLES ET AL NO 1
Pace Project No.: 60136701

Sample: GW-074935-010913-CM-MW-4 **Lab ID: 60136701004** Collected: 01/09/13 10:00 Received: 01/10/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.12	1		01/11/13 21:17	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.060	1		01/11/13 21:17	100-41-4	
Toluene	ND	ug/L	1.0	0.054	1		01/11/13 21:17	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.67	1		01/11/13 21:17	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	110	%	80-120		1		01/11/13 21:17	1868-53-7	
Toluene-d8 (S)	91	%	80-120		1		01/11/13 21:17	2037-26-5	
4-Bromofluorobenzene (S)	100	%	80-120		1		01/11/13 21:17	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	80-120		1		01/11/13 21:17	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		01/11/13 21:17		

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ANALYTICAL RESULTS

Project: 074935 CHARLES ET AL NO 1
Pace Project No.: 60136701

Sample: GW-074935-010913-CM-DUP **Lab ID: 60136701005** Collected: 01/09/13 10:50 Received: 01/10/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	**142**	ug/L	1.0	0.12	1		01/11/13 21:33	71-43-2	
Ethylbenzene	**438**	ug/L	20.0	2.4	20		01/17/13 00:26	100-41-4	
Toluene	**1520**	ug/L	20.0	1.4	20		01/17/13 00:26	108-88-3	
Xylene (Total)	**3090**	ug/L	60.0	3.8	20		01/17/13 00:26	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	108	%	80-120		1		01/11/13 21:33	1868-53-7	
Toluene-d8 (S)	102	%	80-120		1		01/11/13 21:33	2037-26-5	
4-Bromofluorobenzene (S)	99	%	80-120		1		01/11/13 21:33	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	80-120		1		01/11/13 21:33	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		01/11/13 21:33		

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ANALYTICAL RESULTS

Project: 074935 CHARLES ET AL NO 1
Pace Project No.: 60136701

Sample: TB-074935-010913-CM-001 **Lab ID: 60136701006** Collected: 01/09/13 00:00 Received: 01/10/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		01/17/13 00:42	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.12	1		01/17/13 00:42	100-41-4	
Toluene	ND	ug/L	1.0	0.070	1		01/17/13 00:42	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.19	1		01/17/13 00:42	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	93	%	80-120		1		01/17/13 00:42	1868-53-7	
Toluene-d8 (S)	106	%	80-120		1		01/17/13 00:42	2037-26-5	
4-Bromofluorobenzene (S)	101	%	80-120		1		01/17/13 00:42	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	80-120		1		01/17/13 00:42	17060-07-0	
Preservation pH	**1.0**		1.0		1		01/17/13 00:42		

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QUALITY CONTROL DATA

Project: 074935 CHARLES ET AL NO 1
Pace Project No.: 60136701

QC Batch: MSV/51250 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60136701001, 60136701002, 60136701003, 60136701004, 60136701005

METHOD BLANK: 1125222 Matrix: Water
Associated Lab Samples: 60136701001, 60136701002, 60136701003, 60136701004, 60136701005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	01/11/13 20:14	
Ethylbenzene	ug/L	ND	1.0	01/11/13 20:14	
Toluene	ug/L	ND	1.0	01/11/13 20:14	
Xylene (Total)	ug/L	ND	3.0	01/11/13 20:14	
1,2-Dichloroethane-d4 (S)	%	110	80-120	01/11/13 20:14	
4-Bromofluorobenzene (S)	%	98	80-120	01/11/13 20:14	
Dibromofluoromethane (S)	%	106	80-120	01/11/13 20:14	
Toluene-d8 (S)	%	98	80-120	01/11/13 20:14	

LABORATORY CONTROL SAMPLE: 1125223

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	19.3	96	74-123	
Ethylbenzene	ug/L	20	17.4	87	76-123	
Toluene	ug/L	20	18.0	90	75-123	
Xylene (Total)	ug/L	60	52.5	88	76-123	
1,2-Dichloroethane-d4 (S)	%			111	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Dibromofluoromethane (S)	%			104	80-120	
Toluene-d8 (S)	%			95	80-120	

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QUALITY CONTROL DATA

Project: 074935 CHARLES ET AL NO 1
Pace Project No.: 60136701

QC Batch: MSV/51307
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60136701005, 60136701006

METHOD BLANK: 1126950
Matrix: Water
Associated Lab Samples: 60136701005, 60136701006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	01/17/13 00:11	
Ethylbenzene	ug/L	ND	1.0	01/17/13 00:11	
Toluene	ug/L	ND	1.0	01/17/13 00:11	
Xylene (Total)	ug/L	ND	3.0	01/17/13 00:11	
1,2-Dichloroethane-d4 (S)	%	96	80-120	01/17/13 00:11	
4-Bromofluorobenzene (S)	%	98	80-120	01/17/13 00:11	
Dibromofluoromethane (S)	%	94	80-120	01/17/13 00:11	
Toluene-d8 (S)	%	110	80-120	01/17/13 00:11	

LABORATORY CONTROL SAMPLE: 1126951

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	19.5	98	74-123	
Ethylbenzene	ug/L	20	23.8	119	76-123	
Toluene	ug/L	20	24.0	120	75-123	
Xylene (Total)	ug/L	60	70.1	117	76-123	
1,2-Dichloroethane-d4 (S)	%			95	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Dibromofluoromethane (S)	%			94	80-120	
Toluene-d8 (S)	%			111	80-120	

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QUALIFIERS

Project: 074935 CHARLES ET AL NO 1
Pace Project No.: 60136701

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: MSV/51250

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/51307

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074935 CHARLES ET AL NO 1
Pace Project No.: 60136701

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60136701001	**GW-074935-010913-CM-MW-1**	EPA 8260	MSV/51250		
60136701002	**GW-074935-010913-CM-MW-2**	EPA 8260	MSV/51250		
60136701003	**GW-074935-010913-CM-MW-3**	EPA 8260	MSV/51250		
60136701004	**GW-074935-010913-CM-MW-4**	EPA 8260	MSV/51250		
60136701005	**GW-074935-010913-CM-DUP**	EPA 8260	MSV/51250		
60136701005	**GW-074935-010913-CM-DUP**	EPA 8260	MSV/51307		
60136701006	**TB-074935-010913-CM-001**	EPA 8260	MSV/51307		

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Sample Condition Upon Receipt
ESI Tech Spec Client

WO#: 60136701

60136701

Client Name: COP CRANM

Optional
Proj Due Date:
Proj Name:

Courier: Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐

Tracking #: 8022 4453 3781 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☑ ZPLC

Thermometer Used: T-191 / T-194 (T112) **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.4

Date and initials of person examining contents: 1/10/13 BB

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☑No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.
Sample labels match COC: Includes date/time/ID/analyses Matrix: WT	☑Yes ☐No ☐N/A	13.
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☑Yes ☐No	Initial when completed / Lot # of added preservative
Trip Blank present: Pace Trip Blank lot # (if purchased):	☑Yes ☐No ☐N/A	15. 1 of 3 TB were broken inside cooler.
Headspace in VOA vials (>6mm):	☐Yes ☑No ☐N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y / (N) Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: ADF Date: 1/10/13

Temp Log: Record start and finish times when unpacking cooler. if >20 min, recheck sample temps.

Start: 1395	Start:
End: 1350	End:
Temp:	Temp:

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company:	COP CRA NM
Address:	6121 Indian School Rd NE, Ste 200
	Albequerque, NM 87110
Email To:	cmathews@craworld.com
Phone: (505)884-0672	Fax: (505)884-4932
Requested Due Date/TAT:	standard

Section B Required Project Information:

Report To:	Christine Mathews
Copy To:	Kelly Blanchard, Angela Bown, Cassie Brown
Purchase Order No.:	
Project Name:	Charles et al No.1
Project Number:	074935

Section C Invoice Information:

Attention:	ENFOS
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Alice Flanagan
Pace Profile #:	5514. 4

REGULATORY AGENCY

NPDES / GROUND WATER / DRINKING WATER / UST / RCRA / OTHER ______

Site Location STATE: NM

Requested Analysis Filtered (Y/N)

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	8260 BTEX	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	GW-074935-010913-CM-MW-1	WT	G			1.9.13	1040		3				X						X		7DG9H 01
2	GW-074935-010913-CM-MW-2	WT	G			1.9.13	1105		3				X						X		02
3	GW-074935-010913-CM-MW-3	WT	G			1.9.13	1015		3				X						X		03
4	GW-074935-010913-CM-MW-4	WT	G			1.9.13	1000		3				X						X		04
5	GW-074935-010913-CM-DUP	WT	G			1.9.13	1050		3				X						X		05
6	TB-074935-010913-CM-001	WT				1.9.13	1500		3				X						X		2DG9H 06
7																					
8																					
9																					
10																					
11																					
12																					

Pace Project No.: 60136701

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Christine Mathews / CRA	1-9-13	1600	Benell [signature]	1/10/13	~~1028~~ 830 (BA 1/10/13)	2.4	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Christine Mathews

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 1-9-13

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007