3R - 084

2012 AGWMR

02/19/2013

CONESTOGA-ROVERS
& ASSOCIATES

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February 19, 2013

Reference No. 074925, 074927, 074928
074929, 074932, 074934
075038

Mr. Glenn von Gonten
New Mexico Oil Conservation Division
1220 South Saint Francis Dr.
Santa Fe, NM 87505

Dear Mr. von Gonten:

Re: Groundwater Monitoring Reports - 2012

Enclosed, please find a copy of the reports listed below compiled by Conestoga-Rovers and Associates, Inc.

3R434 1. Farmington B Com No. 1E Annual Groundwater Monitoring Report - September 2012
3R434 2. Faye Burdette No. 1 Annual Groundwater Monitoring Report - September 2012
3R069 3. Hampton No. 4M Annual Groundwater Monitoring Report - September 2012
3R431 4. Howell K No. 1 Annual Groundwater Monitoring Report - September 2012
3R471 5. Johnston Federal No. 4 Metering Station Annual Groundwater Monitoring Report - September 2012
3R426 6. San Juan 27-5 No. 34A Annual Groundwater Monitoring Report - September 2012
3R428 7. Sategna No. 2E Quarterly Groundwater Monitoring Report - September 2012

If you have any questions or require additional information, please contact me at (505) 884-0672 or keblanchard@craworld.com.

Sincerely,
CONESTOGA-ROVERS & ASSOCIATES

Kelly E. Blanchard

Kelly E. Blanchard
Project Manager

JP/cjg/1
Encl.

cc: Brandon Powell, NMOCD
Terry Lauck, ConocoPhillips (electronic only)

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SEPTEMBER 2012 ANNUAL GROUNDWATER MONITORING REPORT

CONOCOPHILLIPS FARMINGTON B COM No. 1E
SAN JUAN COUNTY, NEW MEXICO

API# 30-045-24774

NMOCD# 3R0084

Prepared For:

CONOCOPHILLIPS COMPANY

Risk Management and Remediation

420 South Keeler Avenue

Bartlesville, OK, 74004

JANUARY 2012

REF. NO. 074938 (3)

This report is printed on recycled paper.

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1.0 INTRODUCTION

This report presents the results of the September 21, 2012 annual groundwater monitoring event completed by Conestoga-Rovers & Associates, Inc. (CRA) at the Farmington B Com No. 1E remediation site in Farmington, New Mexico (Site). The Site is located on private property in southeast Farmington, New Mexico, near the corner of East Murray Drive and South Carlton Avenue. Geographical coordinates for the Site are 36.721137° North and 108.190501° West. The Site consists of a natural gas well and associated equipment and installations. The location and general features of the Site are presented as **Figures 1** and **2**, respectively. A generalized geological cross section of the Site is included as **Figure 3**.

1.1 BACKGROUND

Conoco Inc., predecessor to ConocoPhillips Company (ConocoPhillips), owned the property and operated the gas well between July 1991 and January 1997. Merrion Oil & Gas Company is the current property owner and well operator. A Phase II Environmental Site Assessment associated with the property transfer was conducted by On Site Technologies, Limited (On Site) in March 1997. Soil hydrocarbon impacts were confirmed north of a production storage tank and west of a separator/dehydrator pit (**Figure 2**). Impacts were described by On Site as limited to a former unlined pit area with hydrocarbon migration primarily occurring vertically through the soil profile due to the porous and permeable subsurface soils; lateral migration was considered minimal (On Site, 1997). Soil excavation of the two impacted areas occurred in September 1997. A total of 906 cubic yards of impacted soil were removed from the two excavation areas. Of the 906 cubic yards, 328 were transported offsite and 578 were screened and placed back into the excavated areas along with clean fill. During backfill activities, approximately 10 gallons of liquid fertilizer was sprayed into both excavations to enhance in situ degradation of residual hydrocarbons (On Site, 1997).

Groundwater Monitor Wells MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6 were installed at the Site in February and August 1998 under the supervision of On Site. During 1998 and 1999, results from groundwater samples collected from MW-2 through MW-6 did not have benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations in excess of New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standards. On Site then requested that groundwater quality monitoring in Monitor Wells MW-2 through MW-6 be discontinued. The request was approved by the New Mexico Energy, Minerals, and Natural Resources Department (NMEMNRD) in a letter to Ms. Shirley Ebert of Conoco Inc. (NMEMNRD, 2000).

Although Monitor Wells MW-2 through MW-6 showed no hydrocarbon impacts during 1998 and 1999, light non-aqueous phase liquid (LNAPL) has been present in MW-1 since its installation and recovery has been ongoing. Souder Miller and Associates (SMA) placed active and passive skimmers in MW-1 in May 2004. The passive skimmer collected a small amount of LNAPL; the active skimmer did not collect any LNAPL. SMA determined that an active skimmer was not a viable method of LNAPL recovery in MW-1 and proposed passive skimming or periodic hand bailing.

Tetra Tech, Inc. (Tetra Tech) began groundwater quality monitoring at the Site in May 2005. Tetra Tech monitored MW-1 and MW-6, which is located downgradient of MW-1. Quarterly groundwater pumping events were conducted at MW-1 from October 2004 to March 2008.

On June 15, 2011, Site consulting responsibilities were transferred from Tetra Tech to CRA of Albuquerque, NM. Quarterly groundwater sampling of MW-1 and MW-6 was continued by CRA. After 12 consecutive quarters of sampling with BTEX constituents below NMWQCC standards, BTEX analysis was discontinued following the December 2011 sampling event and annual sampling for dissolved iron and dissolved manganese, the two remaining constituents of concern above standards, was initiated. A summary of the Farmington B Com No. 1E Site history can be seen in **Table 1.**

2.0 GROUNDWATER MONITORING METHODOLOGY AND ANALYTICAL RESULTS

2.1 GROUNDWATER MONITORING SUMMARY

An annual groundwater sampling event was conducted by CRA on September 21, 2012. Groundwater elevation measurements were collected from all Site monitor wells. An LNAPL sheen was present in the purged water from MW-1 prior to sampling. As a result, no field groundwater quality parameters were collected for MW-1. Groundwater samples were collected from Monitor Wells MW-1 and MW-6 during the sampling event.

2.2 GROUNDWATER MONITORING METHODOLOGY

Groundwater Elevation Measurements

During the sampling event groundwater elevation measurements were recorded for Monitor Wells MW-1 through MW-6 using an oil/water interface probe. Groundwater elevations are detailed in **Table 2**. A groundwater potentiometric surface map is presented as **Figures 4.** Based on monitoring data, groundwater flow remains to the west and is consistent with recent and historic records at this Site. The Animas River is approximately ¾ miles northwest of the Site and flows west.

Groundwater sampling

The September 2012 sampling event represents the first sampling event with BTEX analysis discontinued. Approximately three well volumes were purged from each monitor well with a dedicated polyethylene 1.5-inch disposable bailer. 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. The samples were analyzed for the presence dissolved iron and dissolved manganese according to EPA Method 6010. Groundwater sampling field forms are included as **Appendix A.**

2.3 GROUNDWATER MONITORING ANALYTICAL RESULTS

The New Mexico Water Quality Control Commission (NMWQCC) mandates that groundwater quality in New Mexico be protected, and has issued groundwater quality standards in Title 20, Chapter 6, Part 2, Section 3103 of the New Mexico Administrative Code (20.6.2.3103 NMAC). Groundwater quality standards have been set for the protection of human health, domestic water supply, and irrigation use. Exceedences of NMWQCC groundwater quality standards in Site monitor wells are discussed below.

September 2012

- **Dissolved Manganese**
  - The groundwater quality standard for dissolved manganese is 0.2 mg/L. The groundwater sample collected from Monitor Well MW-1 during the September 2012 sampling event was found to contain dissolved manganese at a concentration of 0.27 mg/L.

- **Dissolved Iron**
  - The groundwater quality standard for dissolved iron is 1.0 mg/L. Groundwater analysis of the sample collected from Monitor Well MW-1 during the September 2012 sampling event indicated a dissolved iron concentration of 2.9 mg/L.

Laboratory analytical results are summarized in **Table 3**. The laboratory analytical report is included in **Appendix B**. A table of the SMA historical analytical data is attached as **Appendix C**.

3.0 CONCLUSIONS AND RECOMMENDATIONS

The September 2012 sampling event represents the first groundwater sampling event with BTEX analysis discontinued.

Groundwater samples collected from MW-1 have consistently exceeded the groundwater quality standard for dissolved manganese and have intermittently exceeded the standard for dissolved iron. Groundwater samples from MW-6 have intermittently exceeded the groundwater quality standard for dissolved manganese.

Sampling for dissolved iron and dissolved manganese will continue on an annual basis. Remediation Site closure will be requested when groundwater quality results indicate that all monitored groundwater quality parameters are consistently below NMQWCC groundwater quality standards, are stable, or are representative of background conditions at the Site. During each monitoring event, all monitor wells will be gauged and LNAPL thickness will be monitored and recorded if present.

CRA recommends sampling for dissolved manganese and dissolved iron for all Site monitor wells during the next sampling event in September of 2013 for the purpose of further establishing background conditions.

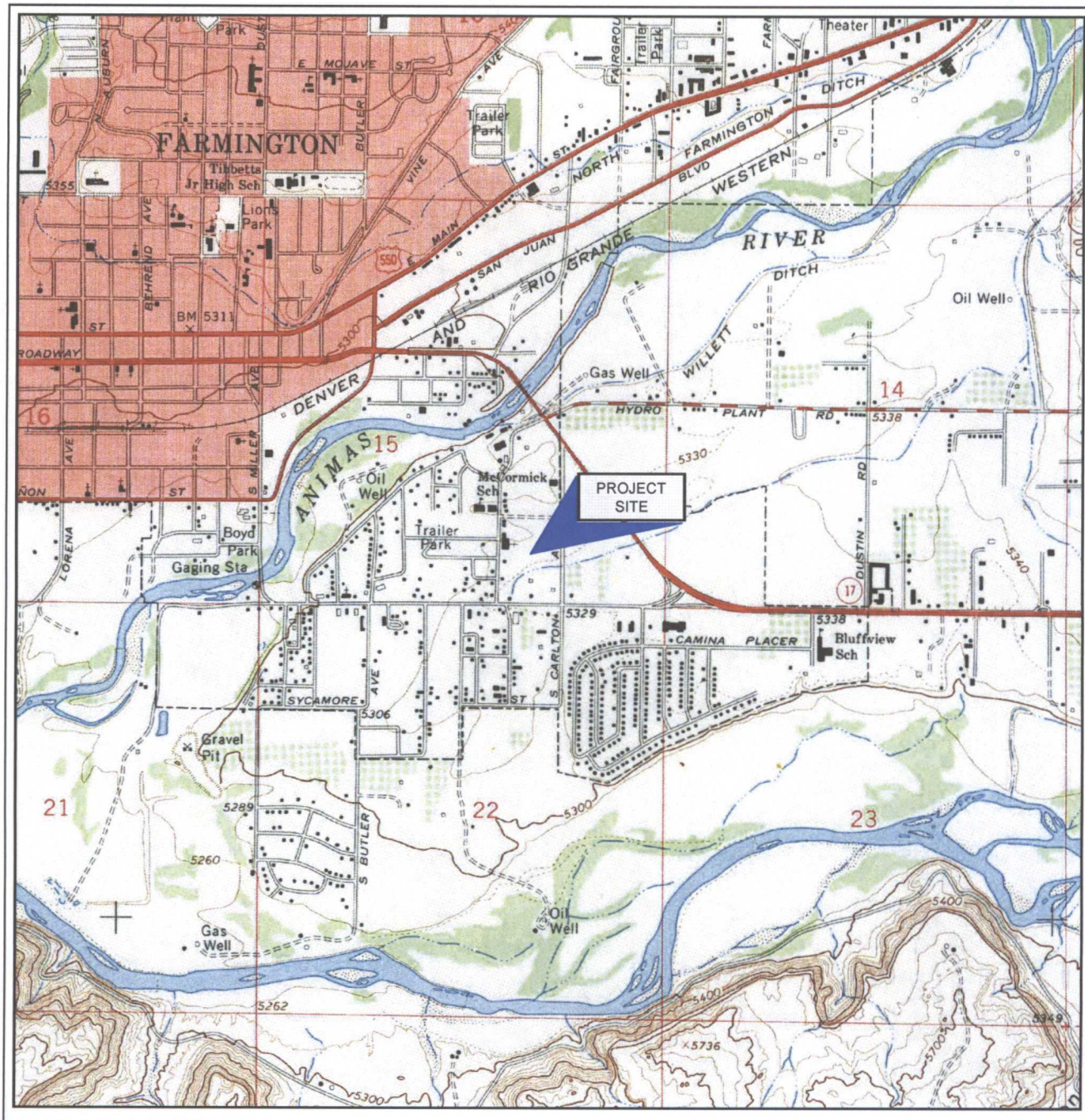
4.0 REFERENCES

New Mexico Energy, Minerals, and Natural Resources Department. (2000). *Re: Farmington B Com #1E Well Site.* Letter to Ms. Shirley Ebert, Conoco, Inc. December 13, 2000.

On-Site Technologies, Ltd. (1997). *Annual Summary, Pit Closures and Groundwater Impact Updates, State of New Mexico, 1996.* Prepared for Conoco Inc., Midland Division. Report dated April 22, 1997. 21 pp.

On-Site Technologies, Ltd. (1997). *Re: Remediation Summary Farmington B Com #1E.* . Letter Attn: Mr. Neal Goates, Senior Environmental Specialist, Conoco, Inc. November 26, 1997.

FIGURES



SOURCE: USGS 7.5 MINUTE QUAD
"FARMINGTON, NEW MEXICO"

N

0 1000 2000ft

CRA

Figure 1

SITE VICINITY MAP
FARMINGTON B-COM NO. 1E
FARMINGTON, NEW MEXICO
ConocoPhillips Company

074938-95(003)GN-DL001-Topo NOV 01/2012

ConocoPhillips High Resolution Aerial Imagery

LEGEND

- WELLHEAD
- MONITORING WELL
- FENCE
- EXISTING MERRION OIL EQUIPMENT

Figure 2

SITE PLAN
FARMINGTON B-COM NO. 1E
FARMINGTON, NEW MEXICO
ConocoPhillips Company

074938-95(003)GN-DL002-SD NOV 01/2012

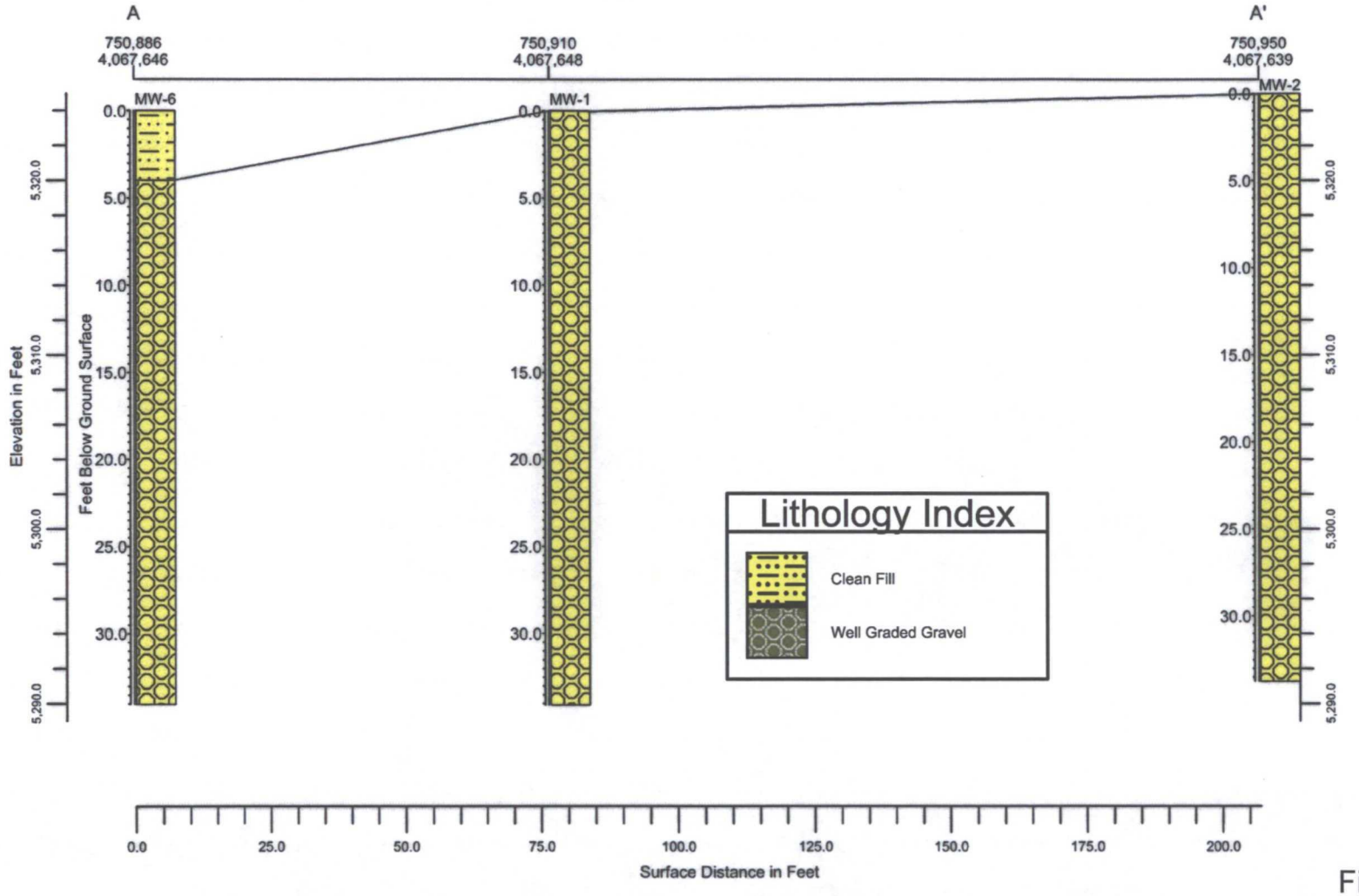


Figure 3

GENERALIZED GEOLOGIC CROSS SECTION
FARMINGTON B-COM No. 1E
FARMINGTON, NEW MEXICO
ConocoPhillips Company

074938-95(003)GN-DL003-X-sec NOV 01/2012

ConocoPhillips High Resolution Aerial Imagery

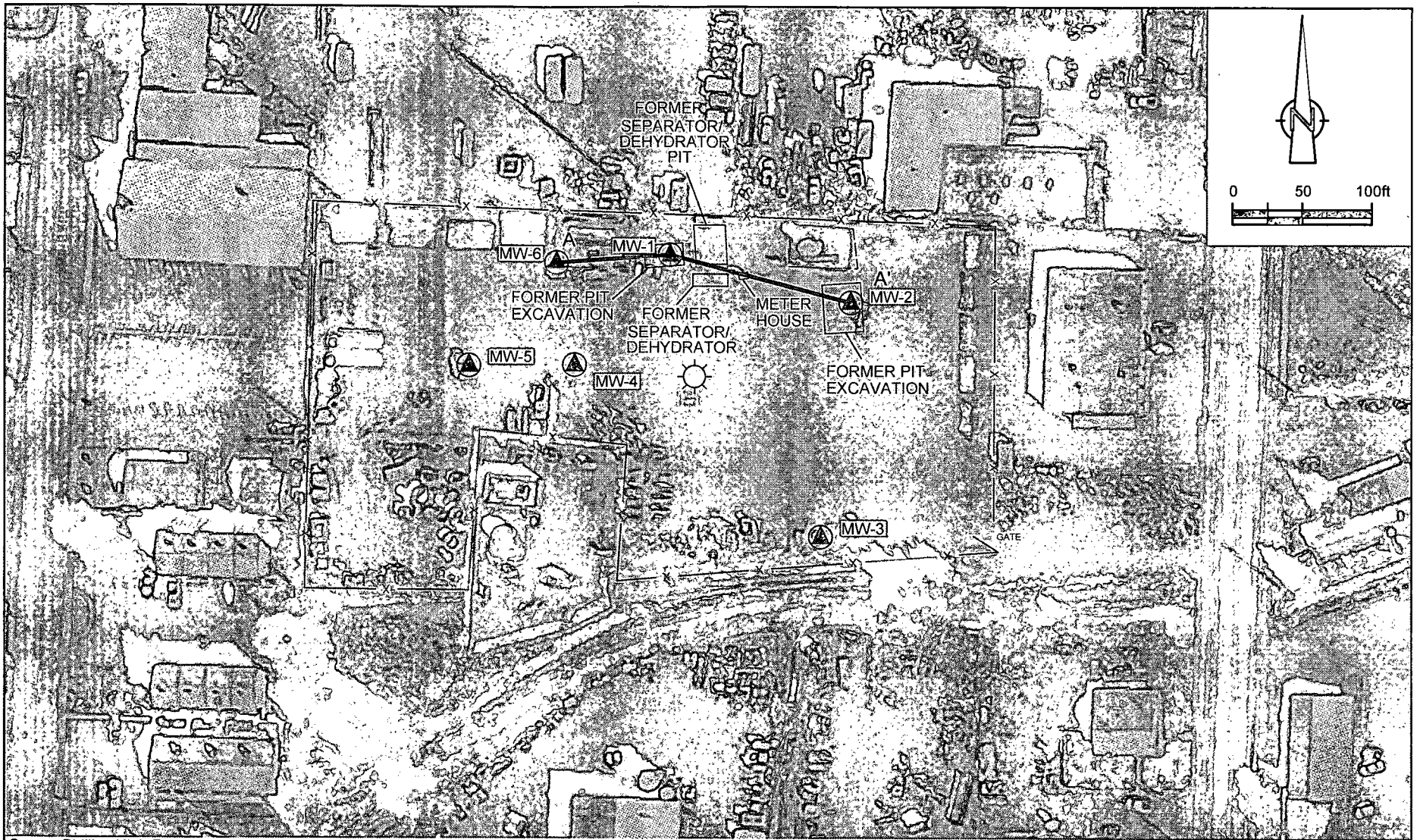
LEGEND

- NATURAL GAS WELLHEAD
- MONITORING WELL
- FENCE
- EXISTING MERRION OIL EQUIPMENT
- (77.55) GROUNDWATER ELEVATION, Ft
- 72.0 GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

Figure 4

SEPTEMBER 2012 GROUNDWATER POTENTIOMETRIC SURFACE MAP
FARMINGTON B-COM No. 1E
FARMINGTON, NEW MEXICO
ConocoPhillips Company

074938-95(003)GN-DL004-GG NOV 01/2012



ConocoPhillips High Resolution Aerial Imagery

LEGEND

WELLHEAD

MONITORING WELL

FENCE

EXISTING MERRION OIL EQUIPMENT

Figure 2

SITE PLAN
FARMINGTON B-COM NO. 1E
FARMINGTON, NEW MEXICO
ConocoPhillips Company

074938-95(003)GN-DL002-SD NOV 01/2012

TABLES

TABLE 1

SITE HISTORY TIMELINE
CONOCOPHILLIPS COMPANY
FARMINGTON B COM No. 1E
SAN JUAN COUNTY, NEW MEXICO

DATE	*Event/Action*	*ACTIVITY*
February 18, 1982	Well Completed	Pioneer Production Corp. completed the Farmington B-COM No. 1E gas production well.
July 1, 1991	Conoco Inc. well purchase	Conoco Inc. purchases wellsite from Mesa Operating Limited Partnership of Amarillo, Texas.
January 1, 1997	Change of ownership	Conoco Inc. sold the property and mineral lease to Merrion Oil & Gas Co.
March, 1997	Site Assessment	Phase II Environmental Site Assessment is conducted by On Site Technologies.Three test holes advanced with Auger refusal encountered at 7 feet below ground surface (bgs) due to gravel and cobbles. No samples collected. On Site Technologies later excavates four additional test holes ranging in depth from 14 to 19 feet bgs. Soil samples are collected from each excavation. TPH and BTEX contamination is found in the vicinity of a former unlined pit.
September, 1997	Soil Excavation	On Site Technologies oversees soil excavation of two pits. 906 cubic yards of impacted soil were removed; of which 328 were disposed of offsite and 578 cubic yards were placed back in the pits along with clean fill. Approximately 10 gallons of liquid fertilizer was sprayed into each pit during backfill.
February and August 1998	Monitor Well Installation	Six monitor wells (MW-1 through MW-6) installed at the site under the supervision of On Site.
October 29, 2004	Groundwater Removal from Monitor Well MW-1	First removal of groundwater - 160 gallons removed by vacuum truck operated by Riley Industrial Services of Farmington, NM.
November 1, 2004	Groundwater Removal from Monitor Well MW-1	40 gallons removed by vacuum truck operated by Riley Industrial Services of Farmington, NM.
December 3, 2004	Groundwater Removal from Monitor Well MW-1	150 gallons removed by vacuum truck operated by Riley Industrial Services of Farmington, NM.
May 9th and 10th, 2005	Monitor Well Sampling	Tetra Tech begins quarterly monitoring at the site. Groundwater samples collected from monitor wells MW-1 and MW-6. A sheen is noted in MW-1; an oil absorbant sock is placed in the well.
July 6, 2005	Groundwater Removal from Monitor Well MW-1	138 gallons removed by vacuum truck operated by Riley Industrial Services of Farmington, NM.
October 19, 2005	Groundwater Removal from Monitor Well MW-1 and Monitor Well Sampling	Groundwater samples collected from monitor wells MW-1 and MW-6. 186 gallons removed from MW-1; a sheen is observed in purge water and oil absorbant sock is replaced.
February 16, 2006	Groundwater Removal from Monitor Well MW-1	144 gallons removed by vacuum truck operated by Riley Industrial Services of Farmington, NM.
May 15, 2006		152 gallons removed by vacuum truck operated by Riley Industrial Services of Farmington, NM.
August 2, 2006		457 gallons removed by vacuum truck operated by Riley Industrial Services of Farmington, NM.
November 14, 2006		423 gallons removed by vacuum truck operated by Riley Industrial Services of Farmington, NM.
November 14, 2006	Monitor Well Sampling	Third sampling of monitor wells MW-1 and MW-6 conducted by Tetra Tech.
February 20, 2007	Groundwater Removal from Monitor Well MW-1	220 gallons removed by vacuum truck operated by Riley Industrial Services of Farmington, NM.
May 15, 2007		364 gallons removed by vacuum truck operated by Riley Industrial Services of Farmington, NM.
August 21, 2007		684 gallons removed by vacuum truck operated by Riley Industrial Services of Farmington, NM.
November 7, 2007		651 gallons removed by vacuum truck operated by Riley Industrial Services of Farmington, NM.
November 7, 2007	Monitor Well Sampling	Fourth sampling of monitor wells MW-1 and MW-6 conducted by Tetra Tech.
January 16, 2008	Groundwater Removal from Monitor Well MW-1	149 gallons removed by vacuum truck operated by Riley Industrial Services of Farmington, NM.

TABLE 1

SITE HISTORY TIMELINE
CONOCOPHILLIPS COMPANY
FARMINGTON B COM No. 1E
SAN JUAN COUNTY, NEW MEXICO

DATE	*Event/Action*	*ACTIVITY*
March 18, 2008	Groundwater Removal from Monitor Well MW-1	93 gallons removed by vacuum truck operated by Riley Industrial Services of Farmington, NM.
July 24, 2008	Monitor Well Sampling	Initiation of quarterly sampling for monitor wells MW-1 and MW-6.
October 22, 2008	Monitor Well Sampling	Continuation of quarterly sampling for monitor wells MW-1 and MW-6.
January 21, 2009	Monitor Well Sampling	Continuation of quarterly sampling for monitor wells MW-1 and MW-6. MW-1 not sampled due to presence of free product. Oil absorbent sock placed in the well.
April 1, 2009	Monitor Well Sampling	Continuation of quarterly sampling for monitor wells MW-1 and MW-6. No free product detected in MW-1. First quarter of compliance for all BTEX constituents.
June 10, 2009	Monitor Well Sampling	Continuation of quarterly sampling for monitor wells MW-1 and MW-6. No free product detected in MW-1. Second quarter of compliance for all BTEX constituents.
October 1, 2009	Monitor Well Sampling	Continuation of quarterly sampling for monitor wells MW-1 and MW-6. No free product detected in MW-1. Third quarter of compliance for all BTEX constituents.
December 17, 2009	Monitor Well Sampling	Continuation of quarterly sampling for monitor wells MW-1 and MW-6. No free product detected in MW-1. Fourth quarter of compliance for all BTEX constituents.
March 29, 2010	Monitor Well Sampling	Continuation of quarterly sampling for monitor wells MW-1 and MW-6. A thin hydrocarbon sheen is detected in MW-1. Fifth quarter of compliance for all BTEX constituents.
June 11, 2010	Monitor Well Sampling	Continuation of quarterly sampling for monitor wells MW-1 and MW-6. A thin hydrocarbon sheen is detected in MW-1. Sixth quarter of compliance for all BTEX constituents.
September 24, 2010	Monitor Well Sampling	Continuation of quarterly sampling for monitor wells MW-1 and MW-6. A thin hydrocarbon sheen is detected in MW-1. Seventh quarter of compliance for all BTEX constituents.
February 7, 2011	Monitor Well Sampling	Continuation of quarterly sampling for monitor wells MW-1 and MW-6. A thin hydrocarbon sheen is detected in MW-1. Eighth quarter of compliance with NMWQCC standards for BTEX; however, dissolved manganese concentrations in MW-1 and MW-6 were above standards.
March 18, 2011	Monitor Well Sampling	Continuation of quarterly groundwater sampling for monitor wells MW-1 and MW-6. Nineth quarter of compliance with NMWQCC standards for BTEX; however, dissolved manganese concentration in MW-1 was above standard.
June 15, 2011	Transfer of Site Consulting Responsibilities	Site consulting responsibilities were transferred from Tetra Tech of Albuquerque, NM to Conestoga-Rovers & Associates of Albuquerque, NM.
June 20, 2011	Monitor Well Sampling	Continuation of quarterly groundwater sampling for monitor wells MW-1 and MW-6. Tenth quarter of compliance with NMWQCC standards for BTEX; however, dissolved manganese concentration in both MW-1 and MW-6 were above standard. LNAPL sheen present in MW-1.
September 30, 2011	Monitor Well Sampling	Continuation of quarterly groundwater sampling for monitor wells MW-1 and MW-6. 11th quarter of compliance with NMWQCC standards for BTEX; however, dissolved manganese and dissolved iron concentrations were above standards in MW-1. LNAPL sheen present in MW-1.
December 15, 2011	Monitor Well Sampling	Continuation of quarterly groundwater sampling for monitor wells MW-1 and MW-6. 12th quarter of compliance with NMWQCC standards for BTEX; however, dissolved manganese and dissolved iron concentrations were above standards in MW-1 and dissolved manganese concentration was above standard in MW-6. LNAPL sheen present in MW-1.
September 21, 2012	Monitor Well Sampling	Analysis for BTEX discontinued. Monitor Wells MW-1 and MW-6 sampled and analyzed for dissolved manganese and dissolved iron. LNAPL sheen present in MW-1.

TABLE 2

MONITOR WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS
CONOCOPHILLIPS COMPANY
FARMINGTON B COM No. 1E
SAN JUAN COUNTY, NEW MEXICO

Well ID	*Total Depth (ft)*	*Surface Elevation**	*Screen Interval (ft bgs)*	*Date Measured*	*Depth to Product (ft below TOC)*	*Depth to Groundwater (ft below TOC)*	*Relative Water Level**
MW-1	34.09	101.37	19.09 - 34.09	5/9/2005	Sheen	28.30	73.07
				7/6/2005	-	26.50	74.87
				10/19/2005	Sheen	25.12	76.25
				2/16/2006	-	28.23	73.14
				5/15/2006	-	27.02	74.35
				8/2/2006	-	24.37	77.00
				11/14/2006	Sheen	26.48	74.89
				2/20/2007	Sheen	29.03	72.34
				5/15/2007	-	26.97	74.40
				8/21/2007	Sheen	25.20	76.17
				11/7/2007	26.1	26.30	75.07
				1/16/2008	27.88	29.24	72.13
				3/18/2008	29.27	29.27	72.10
				7/24/2008	Sheen	25.73	75.64
				10/22/2008	Sheen	25.35	76.02
				1/21/2009	27.9	28.25	73.12
				4/1/2009	-	29.47	71.90
				6/10/2009	-	26.75	74.62
				10/1/2009	-	23.14	78.23
				12/17/2009	-	26.31	75.06
				3/29/2010	28.68	28.71	72.66
				6/11/2010	Sheen	25.98	75.39
				9/24/2010	Sheen	25.26	76.11
				2/7/2011	Sheen	28.83	72.54
				3/18/2011	29.71	29.73	71.64
				6/20/2011	Sheen	27.00	74.37
				9/30/2011	Sheen	24.32	77.05
				12/15/2011	Sheen	26.90	74.47
				9/21/2012	Sheen	24.52	76.85
MW-2	33.72	101.57	18.72 - 33.72	5/9/2005	-	27.28	74.29
				7/6/2005	-	25.52	76.05
				10/19/2005	-	24.30	77.27
				2/16/2006	-	27.38	74.19
				5/15/2006	-	25.62	75.95
				8/2/2006	-	23.51	78.06
				11/14/2006	-	26.08	75.49
				2/20/2007	-	28.13	73.44
				5/15/2007	-	25.86	75.71
				8/21/2007	-	24.45	77.12
				11/7/2007	-	25.31	76.26
				1/16/2008	-	27.27	74.30
				3/18/2008	-	28.68	72.89
				7/24/2008	-	24.77	76.80
				10/22/2008	-	24.55	77.02
				1/21/2009	-	27.23	74.34
				4/1/2009	-	28.76	72.81
				6/10/2009	-	25.76	75.81
				10/1/2009	-	22.22	79.35
				12/17/2009	-	25.62	75.95
				3/29/2010	-	27.96	73.61
				6/11/2010	-	24.99	76.58
				9/24/2010	-	24.54	77.03
				2/7/2011	-	28.22	73.35
				3/18/2011	-	29.14	72.43
				6/20/2011	-	26.20	75.37
				9/30/2011	-	23.51	78.06
				12/15/2011	-	26.22	75.35
				9/21/2012	-	23.81	77.76

TABLE 2

MONITOR WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS
CONOCOPHILLIPS COMPANY
FARMINGTON B COM No. 1E
SAN JUAN COUNTY, NEW MEXICO

Well ID	*Total Depth (ft)*	*Surface Elevation**	*Screen Interval (ft bgs)*	*Date Measured*	*Depth to Product (ft below TOC)*	*Depth to Groundwater (ft below TOC)*	*Relative Water Level**
MW-3	32.44	102.1	17.44 - 32.44	5/9/2005	-	27.81	74.29
				7/6/2005	-	26.03	76.07
				10/19/2005	-	25.06	77.04
				2/16/2006	-	28.57	73.53
				5/15/2006	-	26.15	75.95
				8/2/2006	-	23.83	78.27
				11/14/2006	-	26.75	75.35
				2/20/2007	-	29.31	72.79
				5/15/2007	-	26.23	75.87
				8/21/2007	-	25.00	77.10
				11/7/2007	-	26.12	75.98
				1/16/2008	-	28.46	73.64
				3/18/2008	-	29.97	72.13
				7/24/2008	-	25.27	76.83
				10/22/2008	-	25.35	76.75
				1/21/2009	-	28.56	73.54
				4/1/2009	-	30.20	71.90
				6/10/2009	-	26.55	75.55
				10/1/2009	-	23.00	79.10
				12/17/2009	-	26.86	75.24
				3/29/2010	-	29.41	72.69
				6/11/2010	-	25.62	76.48
				9/24/2010	-	25.23	76.87
				2/7/2011	-	29.47	72.63
				3/18/2011	-	30.40	71.70
				6/20/2011	-	26.83	75.27
				9/30/2011	-	23.95	78.15
				12/15/2011	-	27.41	74.69
				9/21/2012	-	24.55	77.55
MW-4	32.72	101.4	17.72 - 32.72	5/9/2005	-	28.73	72.67
				7/6/2005	-	26.66	74.74
				10/19/2005	-	25.62	75.78
				2/16/2006	-	28.91	72.49
				5/15/2006	-	26.86	74.54
				8/2/2006	-	24.59	76.81
				11/14/2006	-	27.02	74.38
				2/20/2007	-	29.61	71.79
				5/15/2007	-	27.25	74.15
				8/21/2007	-	25.56	75.84
				11/7/2007	-	26.50	74.90
				1/16/2008	-	28.55	72.85
				3/18/2008	-	29.99	71.41
				7/24/2008	-	26.02	75.38
				10/22/2008	-	25.84	75.56
				1/21/2009	-	28.69	72.71
				4/1/2009	-	30.22	71.18
				6/10/2009	-	27.31	74.09
				10/1/2009	-	23.80	77.60
				12/17/2009	-	27.07	74.33
				3/29/2010	-	29.51	71.89
				6/11/2010	-	26.43	74.97
				9/24/2010	-	25.70	75.70
				2/7/2011	-	29.49	71.91
				3/18/2011	-	30.38	71.02
				6/20/2011	-	27.34	74.06
				9/30/2011	-	24.68	76.72
				12/15/2011	-	27.58	73.82
				9/21/2012	-	25.01	76.39

TABLE 2

MONITOR WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS
CONOCOPHILLIPS COMPANY
FARMINGTON B COM No. 1E
SAN JUAN COUNTY, NEW MEXICO

Well ID	*Total Depth (ft)*	*Surface Elevation**	*Screen Interval (ft bgs)*	*Date Measured*	*Depth to Product (ft below TOC)*	*Depth to Groundwater (ft below TOC)*	*Relative Water Level**
MW-5	34.09	100.52	19.09 - 34.09	5/9/2005	-	28.50	72.02
				7/6/2005	-	26.32	74.20
				10/19/2005	-	25.30	75.22
				2/16/2006	-	28.62	71.90
				5/15/2006	-	26.55	73.97
				8/2/2006	-	24.23	76.29
				11/14/2006	-	27.67	72.85
				2/20/2007	-	29.34	71.18
				5/15/2007	-	27.04	73.48
				8/21/2007	-	25.21	75.31
				11/7/2007	-	26.13	74.39
				1/16/2008	-	28.18	72.34
				3/18/2008	-	29.65	70.87
				7/24/2008	-	25.73	74.79
				10/22/2008	-	25.49	75.03
				1/21/2009	-	28.38	72.14
				4/1/2009	-	29.92	70.60
				6/10/2009	-	27.09	73.43
				10/1/2009	-	23.50	77.02
				12/17/2009	-	26.77	73.75
				3/29/2010	-	29.21	71.31
				6/11/2010	-	26.16	74.36
				9/24/2010	-	25.31	75.21
				2/7/2011	-	29.13	71.39
				3/18/2011	-	30.10	70.42
				6/20/2011	-	27.03	73.49
				9/30/2011	-	24.35	76.17
				12/15/2011	-	27.25	73.27
				9/21/2012	-	24.65	75.87
MW-6	34.02	102.14	19.02 - 34.02	5/9/2005	-	29.94	72.20
				7/6/2005	-	27.89	74.25
				10/19/2005	-	26.70	75.44
				2/16/2006	-	29.85	72.29
				5/15/2006	-	28.11	74.03
				8/2/2006	-	25.83	76.31
				11/14/2006	-	27.91	74.23
				2/20/2007	-	30.52	71.62
				5/15/2007	-	28.61	73.53
				8/21/2007	-	26.67	75.47
				11/7/2007	-	27.52	74.62
				1/16/2008	-	29.43	72.71
				3/18/2008	-	30.85	71.29
				7/24/2008	-	27.26	74.88
				10/22/2008	-	26.85	75.29
				1/21/2009	-	29.52	72.62
				4/1/2009	-	31.00	71.14
				6/10/2009	-	28.44	73.70
				10/1/2009	-	24.75	77.39
				12/17/2009	-	27.90	74.24
				3/29/2010	-	30.29	71.85
				6/11/2010	-	27.58	74.56
				9/24/2010	-	26.74	75.40
				2/7/2011	-	30.35	71.79
				3/18/2011	-	31.21	70.93
				6/20/2011	-	28.50	73.64
				9/30/2011	-	25.85	76.29
				12/15/2011	-	28.41	73.73
				9/21/2012	-	26.03	76.11

Notes:
1. bgs = feet below ground surface
2. ft = Feet
3. TOC = Top of casing
4. * Elevations relative to an arbitrary point set at 100 feet

TABLE 3

GROUNDWATER LABORATORY ANALYTICAL RESULTS SUMMARY
CONOCOPHILLIPS COMPANY
FARMINGTON B COM No. 1E
SAN JUAN COUNTY, NEW MEXICO

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)	Nitrate (as N) (mg/L)	Sulfate (mg/L)
MW-1	MW-1	2/19/1998	(orig)	0.21	0.034	0.37	2.044	--	--	--	--
	MW-1	12/29/1998	(orig)	0.35	ND	0.42	2.8	--	--	--	--
	MW-1	5/9/2005	(orig)	0.017	< 0.0007	0.074	0.25	--	--	< 0.40	77.8
	MW-1	10/19/2005	(orig)	0.034	< 0.001	0.17	1.4	--	--	0.15	39.9
	MW-1	11/14/2006	(orig)	0.018	< 0.0007	0.19	1.6	--	--	< 0.015	145
	MW-1	11/7/2007	(orig)	0.007	< 0.0007	0.12	0.25	--	--	< 0.015	38.4
	MW-1	7/24/2008	(orig)	< 0.005	< 0.005	0.09	0.035	--	--	< 0.5	4.76
	MW-1 Duplicate	7/24/2008	(orig)	< 0.005	< 0.005	0.11	0.059	--	--	--	--
	MW-1	10/22/2008	(orig)	< 0.005	< 0.005	0.088	0.165	--	--	< 0.5	17
	MW-1 Duplicate	10/22/2008	(orig)	< 0.005	< 0.005	0.095	0.186	--	--	--	--
	MW-1	1/21/2009	Free Product - Not Sampled								
	MW-1	4/1/2009	(orig)	< 0.005	< 0.005	0.011	< 0.005	--	--	--	--
	MW-1	6/10/2009	(orig)	< 0.005	< 0.005	0.096	< 0.005	--	--	--	--
	MW-1	10/1/2009	(orig)	0.0013	< 0.001	0.058	0.142	0.233	--	--	--
	MW-1	12/17/2009	(orig)	0.0014	< 0.001	0.1	0.0028	0.521	--	--	--
	MW-1	3/29/2010	(orig)	< 0.001	< 0.001	0.051	< 0.001	0.0803	--	--	--
	MW-1	6/11/2010	(orig)	0.0011	< 0.001	0.098	0.0018	0.0217	--	--	--
	MW-1	9/24/2010	(orig)	< 0.001	< 0.001	0.092	0.0278	0.0285	--	--	--
	MW-1	2/7/2011	(orig)	< 0.001	< 0.001	0.026	< 0.001	--	0.459	--	--
	MW-1	3/18/2011	(orig)	< 0.001	< 0.001	0.01	< 0.001	< 0.02	0.477	--	--
	GW-BCOM-062011-CMB-002	6/20/2011	(orig)	< 0.0010	< 0.0010	0.0912	0.0018	0.157	0.424	--	--
	GW-BCOM-062011-CMB-003	6/20/2011	(Duplicate)	< 0.0010	< 0.0010	0.0952	< 0.0030	--	--	--	--
	GW-074938-093011-CM-005	9/30/2011	(orig)	< 0.001	< 0.001	0.058	0.0048	4.1	0.268	--	--
	GW-074938-093011-CM-006	9/30/2011	(Duplicate)	< 0.001	< 0.001	0.0618	0.0052	--	--	--	--
	GW-074938-121511-CB-MW-1	12/15/2011	(orig)	< 0.001	< 0.001	0.0848	0.0095	1.91	0.35	--	--
	GW-074938-121511-CB-DUP	12/15/2011	(Duplicate)	< 0.001	< 0.001	0.0807	0.0092	--	--	--	--
	GW-074938-092112-JP-MW-1	9/21/2012	(orig)	--	--	--	--	2.9	0.27	--	--

TABLE 3

GROUNDWATER LABORATORY ANALYTICAL RESULTS SUMMARY
CONOCOPHILLIPS COMPANY
FARMINGTON B COM No. 1E
SAN JUAN COUNTY, NEW MEXICO

Well ID	*Sample ID*	*Date*	*Sample Type*	*Benzene (mg/L)*	*Toluene (mg/L)*	*Ethylbenzene (mg/L)*	*Xylenes (total) (mg/L)*	*Iron (dissolved) (mg/L)*	*Manganese (dissolved) (mg/L)*	*Nitrate (as N) (mg/L)*	*Sulfate (mg/L)*
MW-3	GW-074938-121511-CB-MW-3	12/15/2011	(orig)	--	--	--	--	0.246	0.112	--	--
MW-6	MW-6	9/15/1998	(orig)	ND	ND	ND	ND	--	--	--	--
	MW-6	12/29/1998	(orig)	ND	ND	ND	ND	--	--	--	--
	MW-6	3/3/1999	(orig)	ND	ND	ND	ND	--	--	--	--
	MW-6	6/15/1999	(orig)	ND	ND	ND	ND	--	--	--	--
	MW-6	9/15/1999	(orig)	ND	0.0007	0.0011	ND	--	--	--	--
	MW-6	12/14/1999	(orig)	ND	0.0018	0.0007	0.0019	--	--	--	--
	MW-6	1/22/2004	(orig)	ND	ND	ND	ND	--	--	--	--
	MW-6	5/9/2005	(orig)	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--	--	< 0.4	97
	MW-6	10/19/2005	(orig)	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--	--	5.4	52.6
	MW-6	11/14/2006	(orig)	< 0.0005	< 0.0007	< 0.0008	0.001	--	--	< 0.015	159
	MW-6	11/7/2007	(orig)	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--	--	< 0.015	112
	MW-6	7/24/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	< 0.5	44.4
	MW-6	10/22/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	< 0.5	43.7
	MW-6	1/21/2009	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	< 0.5	31.1
	MW-6	4/1/2009	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--	--
	MW-6	6/10/2009	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--	--
	MW-6	10/1/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02	--	--	--
	MW-6	12/17/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	0.0511	--	--	--
	MW-6	3/29/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.0200	--	--	--
	MW-6	6/11/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.0200	--	--	--
	MW-6	9/24/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.0200	--	--	--
	MW-6	2/7/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	**0.543**	--	--
	MW-6	3/18/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02	0.0679	--	--
	GW-BCOM-062011-CMB-001	6/20/2011	(orig)	< 0.0010	< 0.0010	< 0.0010	< 0.0030	< 0.1	**0.43**	--	--
	GW-074938-093011-CM-004	9/30/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05	0.0261	--	--
	GW-074938-121511-CB-MW-6	12/15/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.429	**1.06**	--	--
	GW-074938-092112-JP-MW-6	9/21/2012	(orig)	--	--	--	--	< 0.05	0.058	--	--
	GW-074938-092112-JP-DUP	9/21/2012	(Duplicate)	--	--	--	--	< 0.06	0.055	--	--
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**1.0**	**0.2**	**10**	**600**

Notes:

1. MW = monitoring well
2. NMWQCC = New Mexico Water Quality Control Commission
3. Constituents in **BOLD** are in excess of NMWQCC groundwater quality standards
4. mg/L = milligrams per liter (parts per million)
5. < 1.0 = Below laboratory detection limit of 1.0 mg/L
6. ND = Below laboratory detection limit
7. -- = not sampled

APPENDIX A

SEPTEMBER 2012
ANNUAL GROUNDWATER SAMPLING FIELD FORMS

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Farmington B Com No. 1E JOB# 074938

SAMPLE ID: GW-074938-092112-JP-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)
09 21 12	09 21 12	0830	1.52	4.50

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	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER	24.52 (feet)		WELL ELEVATION	101.37 (feet)	
WELL DEPTH	34.00 (feet)		GROUNDWATER ELEVATION	76.85 (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: murky ODOR: bio COLOR: grey with green globs SHEEN Y/N yes

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

SPECIFIC COMMENTS:

No parameters taken due to presence of free phase hydrocarbons

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

9.21.12 Jason Voss

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Farmington B Com No. 1E JOB# 074938

SAMPLE ID: GW-074938-092112-JP-MW-6 WELL# MW-6

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)
09 21 12	09 21 12	0820	1.27	4.75

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	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER: 26.03 (feet) WELL ELEVATION: 102.14 (feet)

WELL DEPTH: 33.96 (feet) GROUNDWATER ELEVATION: 76.11 (feet)

	TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
70.5						
6.73	17.79 (°C)	6.27 (std)	0.885 (g/L)	1174 (µS/cm)	126.4 (mV)	4.25 (gal)
5.82	18.16 (°C)	6.68 (std)	0.894 (g/L)	1194 (µS/cm)	100.5 (mV)	4.5 (gal)
5.99	18.13 (°C)	6.87 (std)	0.900 (g/L)	1202 (µS/cm)	~~106.4~~ 89.7 (mV)	4.75 (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: light brown SHEEN Y/N

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

SPECIFIC COMMENTS:

Duplicate collected at 0825

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

9-21-12 DATE | Jason Pons PRINT | SIGNATURE

APPENDIX B

SEPTEMBER 2012

ANNUAL GROUNDWATER LABORATORY ANALYTICAL REPORT

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

September 28, 2012

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

RE: Project: 074938 B COM NO 1 E FARMINGTON
Pace Project No.: 60129627

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on September 22, 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

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

CERTIFICATIONS

Project: 074938 B COM NO 1 E FARMINGTON
Pace Project No.: 60129627

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

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

SAMPLE SUMMARY

Project: 074938 B COM NO 1 E FARMINGTON
Pace Project No.: 60129627

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60129627001	**GW-074938-092112-JP-MW-1**	Water	09/21/12 08:30	09/22/12 08:50
60129627002	**GW-074938-092112-JP-MW-6**	Water	09/21/12 08:20	09/22/12 08:50
60129627003	**GW-074938-092112-JP-DUP**	Water	09/21/12 08:25	09/22/12 08:50

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(913)599-5665

SAMPLE ANALYTE COUNT

Project: 074938 B COM NO 1 E FARMINGTON
Pace Project No.: 60129627

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60129627001	GW-074938-092112-JP-MW-1	EPA 6010	SMW	2
60129627002	GW-074938-092112-JP-MW-6	EPA 6010	SMW	2
60129627003	GW-074938-092112-JP-DUP	EPA 6010	SMW	2

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PROJECT NARRATIVE

Project: 074938 B COM NO 1 E FARMINGTON
Pace Project No.: 60129627

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: September 28, 2012

General Information:
3 samples were analyzed for EPA 6010. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 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.

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.

Additional Comments:

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

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

ANALYTICAL RESULTS

Project: 074938 B COM NO 1 E FARMINGTON
Pace Project No.: 60129627

Sample: GW-074938-092112-JP-MW-1 **Lab ID: 60129627001** Collected: 09/21/12 08:30 Received: 09/22/12 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron, Dissolved	**2.9**	mg/L	0.050	0.017	1	09/24/12 13:45	09/26/12 15:47	7439-89-6	
Manganese, Dissolved	**0.27**	mg/L	0.0050	0.00060	1	09/24/12 13:45	09/26/12 15:47	7439-96-5	

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ANALYTICAL RESULTS

Project: 074938 B COM NO 1 E FARMINGTON
Pace Project No.: 60129627

Sample: GW-074938-092112-JP-MW-6 **Lab ID: 60129627002** Collected: 09/21/12 08:20 Received: 09/22/12 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron, Dissolved	ND	mg/L	0.050	0.017	1	09/24/12 13:45	09/26/12 15:51	7439-89-6	
Manganese, Dissolved	**0.058**	mg/L	0.0050	0.00060	1	09/24/12 13:45	09/26/12 15:51	7439-96-5	

Pace Analytical Services, Inc.
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(913)599-5665

ANALYTICAL RESULTS

Project: 074938 B COM NO 1 E FARMINGTON
Pace Project No.: 60129627

Sample: GW-074938-092112-JP-DUP **Lab ID: 60129627003** Collected: 09/21/12 08:25 Received: 09/22/12 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron, Dissolved	ND	mg/L	0.050	0.017	1	09/24/12 13:45	09/26/12 15:54	7439-89-6	
Manganese, Dissolved	**0.054**	mg/L	0.0050	0.00060	1	09/24/12 13:45	09/26/12 15:54	7439-96-5	

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QUALITY CONTROL DATA

Project: 074938 B COM NO 1 E FARMINGTON
Pace Project No.: 60129627

QC Batch: MPRP/19623 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60129627001, 60129627002, 60129627003

METHOD BLANK: 1066229 Matrix: Water
Associated Lab Samples: 60129627001, 60129627002, 60129627003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron, Dissolved	mg/L	ND	0.050	09/26/12 14:46	
Manganese, Dissolved	mg/L	ND	0.0050	09/26/12 14:46	

LABORATORY CONTROL SAMPLE: 1066230

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Dissolved	mg/L	10	9.8	98	80-120	
Manganese, Dissolved	mg/L	1	1.0	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1066231 1066232

Parameter	Units	60129627003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron, Dissolved	mg/L	ND	10	10	9.6	9.6	96	96	75-125	1	20	
Manganese, Dissolved	mg/L	0.054	1	1	1.1	1.1	100	101	75-125	0	20	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 074938 B COM NO 1 E FARMINGTON
Pace Project No.: 60129627

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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074938 B COM NO 1 E FARMINGTON
Pace Project No.: 60129627

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60129627001	**GW-074938-092112-JP-MW-1**	EPA 3010	MPRP/19623	EPA 6010	ICP/16167
60129627002	**GW-074938-092112-JP-MW-6**	EPA 3010	MPRP/19623	EPA 6010	ICP/16167
60129627003	**GW-074938-092112-JP-DUP**	EPA 3010	MPRP/19623	EPA 6010	ICP/16167

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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:		Section B Required Project Information:		Section C Invoice Information:	
Company:	COP CRA NM	Report To:	Christine Mathews	Attention:	COP epayables
Address:	6121 Indian School Rd NE, Ste 200	Copy To:	Kelly Blanchard, Angela Bown	Company Name:	
	Albequerque, NM 87110			Address:	
Email To:	cmathews@craworld.com	Purchase Order No.:	4515860214 4517285006	Pace Quote Reference:	
Phone:	(505)884-0672 Fax: (505)884-4932	Project Name:	B Com No. 1 E Farmington	Pace Project Manager:	Alice Flanagan
Requested Due Date/TAT:	standard	Project Number:	074938	Pace Profile #:	5514, 19

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: NM

Requested Analysis Filtered (Y/N)

ITEM #	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	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	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	Y/N	Analysis Test: 6010 Dissolved Fe & Mn	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	GW-074938-092112-JP-MW-1	WT	G			9-21-12	0830		1			1							X			60129627 BP3E1.5 CU1
2	GW-074938-092112-JP-MW-6	WT	G			9-21-12	0820		1			1							X			CU2
3	GW-074938-092112-JP-DUP	WT	G			9-21-12	0825		1			1							X			CU3
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	/CRA	9-21-12	1200		9-22-12	8:50	2c	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 09/21/12

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.

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 #:** 60129627

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

Optional
Proj Due Date: 10/04
Proj Name:

Tracking #: 8006 9527 2595 **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 **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.6

Date and initials of person examining contents: 9-22-12 BA

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):		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: MRF Date: 9/24/12

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

Start: 1220	Start:
End: 1230	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).

APPENDIX C

SOUDER MILLER & ASSOCIATES HISTORICAL ANALYTICAL DATA

Table 2
BTEX Ground Water Analytical Summary
Farmington B Com 1E
Unit O, Sec. 15 T29N, R13W

Sample Date	Sample ID#	Monitor Well	Remarks	BTEX per EPA 8020 (ppb)			
				Benzene	Toluene	Ethylbenzene	Total-Xylene
2/19/98	9802020-01A	MW#1	On Site Lab.	210.0	34.0	370.0	2044.0
6/12/98	3" of free product	in the bailer					
9/15/98	Not Sampled	free product	in well				
12/29/98	9812053-04A			350.0	BDL	420	2800.0
No	Water	Samples	Taken	in	1999		
1/22/04	Not Sampled	free product	in well				
2/19/98	9802020-02A	MW#2	On Site Lab.	2.4	5.3	16.0	470.0
6/12/98	9806055-02A			0.8	2.7	32.0	171.0
9/15/98	9809035-01A			1.3	2.5	39.0	33.3
12/29/98	9812053-05A			BDL	0.6	2.1	35.0
3/3/99	9903012-05A			BDL	BDL	64	119.0
6/15/99	9906055-05A			BDL	BDL	BDL	BDL
9/15/99	9909054-05A			BDL	BDL	4.1	68.1
12/14/99	9912018-05A			BDL	BDL	1.8	36.4
1/22/04	0401011-004A		lina ba Lab	BDL	BDL	BDL	BDL
2/19/98	9802020-03A	MW#3	On Site Lab.	0.9	1.2	1.6	5.3
06/12/98	9806055-01A			BDL	BDL	0.5	2.0
9/15/98	9809035-02A			BDL	BDL	BDL	BDL
12/29/98	9812053-06A			BDL	BDL	BDL	BDL
3/3/99	9903012-04A			BDL	BDL	BDL	BDL
6/15/99	9906055-04A			BDL	0.9	3.1	56.0
9/15/99	9909054-04A			BDL	0.6	BDL	BDL
12/14/99	9912018-04A			BDL	BDL	BDL	BDL
1/22/04	0401011-002A		lina ba Lab	BDL	BDL	BDL	BDL
WQCC	Action	Levels		10.0	750.0	750.0	620.0

Table 2
BTEX Ground Water Analytical Summary
Farmington B Com 1E
Unit O, Sec. 15 T29N, R13W

Sample Date	Sample ID#	Monitor Well	Remarks	BTEX per EPA 8020 (ppb)			
9/15/98	9809035-03A	MW#4	On Site Lab.	BDL	BDL	BDL	BDL
12/29/98	9812053-03A			BDL	BDL	0.6	BDL
3/3/99	9903012-03A			BDL	BDL	BDL	BDL
6/15/99	9906055-03A			BDL	BDL	BDL	BDL
9/15/99	9909054-03A			BDL	BDL	BDL	BDL
12/14/99	9912018-03A			BDL	0.7	BDL	BDL
3/27/00	0003041-01A			BDL	BDL	BDL	BDL
6/5/00	0006009-02A			BDL	BDL	BDL	BDL
9/11/00	0009020*01A			BDL	BDL	BDL	BDL
1/22/04	0401011-003A		lina ba Lab	BDL	BDL	BDL	BDL
9/15/98	9809035-04A	MW#5	On Site Lab.	BDL	BDL	BDL	BDL
12/29/98	9812053-02A			BDL	BDL	BDL	BDL
3/3/99	9903012-02A			BDL	BDL	BDL	BDL
6/15/99	9906055-02A			BDL	BDL	BDL	BDL
9/15/99	9909054-02A			BDL	BDL	BDL	BDL
12/14/99	9912018-02A			BDL	0.8	BDL	BDL
3/27/00	0003041-02A			BDL	BDL	BDL	BDL
6/5/00	0006009-01A			BDL	BDL	BDL	BDL
12/14/99	9912018-05A			BDL	BDL	1.8	36.4
1/22/04	0401011-005A		lina ba Lab	BDL	BDL	BDL	BDL
9/15/98	9809035-05A	MW#6	On Site Lab.	BDL	BDL	BDL	BDL
12/29/98	9812053-01A			BDL	BDL	BDL	BDL
3/3/99	9903012-01A			BDL	BDL	BDL	BDL
6/15/99	9906055-01A			BDL	BDL	BDL	BDL
9/15/99	9909054-01A			BDL	0.7	1.1	BDL
12/14/99	9912018-01A			BDL	1.8	0.7	1.9
1/22/04	0401011-006A		lina ba Lab	BDL	BDL	BDL	BDL
WQCC	Action	Levels		10.0	750.0	750.0	620.0

Table 2
BTEX Ground Water Analytical Summary
Farmington B Com 1E
Unit O, Sec. 15 T29N, R13W

Sample Date	Sample ID#	Monitor Well	Remarks	Anions ppm	Iron ppm	BOD	COD
1/22/04		MW#1	lina ba Lab	Not Sampled			
1/22/04	0401011-004	MW#2		65.1	BDL		
1/22/04	0401011-002	MW#3		73.3	BDL		
1/22/04	0401011-003	MW#4		67.7	BDL		
1/22/04	0401011-005	MW#5		86.8	BDL		
1/22/04	0401011-006	MW#6		28.2	0.194		