3R – 084

2014 AGWMR

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ConocoPhillips

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

April 16, 2015

Re: NMOCD Case No. 3R-084, 2014 Annual Groundwater Monitoring Report

Dear Mr. von Gonten:

Enclosed is the 2014 Annual Groundwater Monitoring Report for the B Com No. 1E site. This report, prepared by Conestoga-Rovers & Associates (CRA), contains the results of groundwater monitoring and remediation activities conducted during 2014 at the referenced site.

Please let me know if you have any questions.

Sincerely,

Rick Greiner

Enc

CONESTOGA-ROVERS & ASSOCIATES

www.CRAworld.com

2014 Annual Groundwater Monitoring Report

ConocoPhillips Farmington B Com No. 1E
San Juan County, New Mexico
API# 30-045-24774
NMOCD# 3R-084

Prepared for: ConocoPhillips Company

Conestoga-Rovers & Associates
6121 Indian School Road, NE Suite 200
Albuquerque, New Mexico 87110

April 2015 • 074938 • Report No. 5

Partners in Sustainability

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Section 1.0 Introduction

This report presents the results of the annual groundwater monitoring event, temporary injection well installation, in situ chemical oxidation (ISCO), and post-ISCO groundwater monitoring completed by Conestoga-Rovers & Associates, Inc. (CRA) at the Farmington B Com No. 1E remediation site (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. 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.

Groundwater Monitoring 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 Monitoring Wells MW-2 through MW-6 be discontinued. The request was approved by the New Mexico Energy, Minerals, and Natural Resources Department in a letter to Ms. Shirley Ebert of Conoco Inc..

Although Monitoring 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 down-gradient 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**.

Section 2.0 Groundwater Monitoring Methodology and Analytical Results

2.1 Groundwater Monitoring Summary

Annual groundwater sampling was conducted by CRA on September 26, 2014. Groundwater elevation measurements were recorded for Monitoring Wells MW-1 through MW-6 using an oil/water interface probe and can be found in **Table 2**. An LNAPL sheen was noted in MW-1. Based on monitoring data, the groundwater gradient during the September 2014 event was approximately 0.0064 feet per foot to the west-southwest. A groundwater potentiometric surface map is presented as **Figure 4**. The data are consistent with recent and historical records at this Site. An irrigation canal is located immediately south of the Site, comprising a portion of its southern boundary. The Animas River is approximately ¾ miles northwest of the Site and flows west. Flow in both of these surface water features likely affects seasonal groundwater elevations and flow direction as measured in Site monitor wells.

2.2 Groundwater Monitoring Methodology

The September 2014 sampling event represents the fourth sampling event with BTEX analysis discontinued. Prior to sample collection, Monitoring Wells MW-1 and MW-6 were purged of at least three well volumes with a dedicated polyethylene 1.5-inch disposable bailer. During purging, field parameters including pH, conductivity, dissolved oxygen, temperature and oxidation/reduction potential were measured periodically and recorded on field sampling forms. Field parameters are summarized in **Table 3**. Collected 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 of dissolved iron and manganese according to EPA Method 6010.

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. Above-standard results of the September 2014 annual sampling event are discussed below:

- Dissolved Manganese
  - The NMWQCC groundwater quality standard for dissolved manganese is 0.2 mg/L. The groundwater samples collected from Monitoring Wells MW-1 and MW-6 exceeded the standard for dissolved manganese with concentrations of 0.34 mg/L and 0.44 mg/L, respectively.

- Dissolved Iron
  - The NMWQCC groundwater quality standard for dissolved manganese is 1.0 mg/L. The groundwater sample collected from Monitoring Well MW-1 exceeded the standard for dissolved iron with a concentration of 2.3 mg/L.

Laboratory analytical results, including the SMA historical analytical data, are summarized in **Table 4**. The laboratory analytical report for annual groundwater monitoring is included in **Appendix A**.

Section 3.0 Temporary Injection Well Installation

Between October 14 and October 18, 2014, National Exploration, Wells, and Pumps (National EWP) of Peralta, New Mexico, installed two temporary, 2-inch diameter injection wells, TW-1 and TW-2, to be used as injection points for the ISCO (discussed in Section 4.0). All boring locations were marked and cleared for subsurface utilities using the New Mexico One Call system and pre-drilled to a depth of five feet below ground surface (bgs) by hydroexcavation. Borings were advanced using a Speedstar 50K drill rig and the air rotary casing hammer method. TW-1 was installed up-gradient of MW-6 and TW-2 was installed up-gradient from MW-1 (see **Figure 2**). Drill cuttings were collected using a cyclone separator and logged by CRA personnel according to the Unified Soil Classification System. Boring logs from well installation are presented as **Appendix B**. All cuttings generated during well installation were stockpiled onsite.

The soils consisted of gray to brown, dense, well-graded gravels with some sand and silt. Saturated soils, indicating the apparent water table, were encountered at approximately 23 feet bgs. TW-1 and TW-2 were installed at total depths of approximately 26 feet bgs. Each well was constructed of 2-inch diameter, schedule 40 PVC casing and 0.020-inch screen. The annular space around the well screen was filled with 10/20 gradation silica sand to approximately one foot above the well screen, followed by approximately five feet of 3/8-inch hydrated bentonite hole plug. A 95% cement/ 5% bentonite grout mix was placed from the top of the hole plug to ground surface. Each monitoring well was completed with a flush-mount well cover set in a reinforced 3-foot by 3-foot concrete pad.

Section 4.0 In Situ Chemical Oxidation

4.1 ISCO Summary

On September 30, 2013, a groundwater sample was collected from Monitoring Well MW-1 and sent to CRA's Innovative Technology Group (ITG) in order to assess potential in situ technologies to address solubilization of iron and manganese in the reducing groundwater of the Site. ITG determined that ISCO would be the most effective method for the Site. Between November 3 and November 7, 2014, CRA injected approximately 4,650 gallons of a catalyzed sodium persulfate solution into temporary injection wells, TW-1 and TW-2, and Monitoring Well MW-1.

4.2 Post-ISCO Groundwater Monitoring

On December 18, 2014 and January 28, 2015, groundwater samples were collected from Monitoring Wells MW-1 and MW-6 in order to assess the effectiveness of the ISCO treatment.

Samples were analyzed for total petroleum hydrocarbons- gasoline range and diesel range organics (TPH-GRO/DRO) by EPA method 8015, dissolved iron, total iron, dissolved manganese, total manganese, and dissolved sodium by EPA method 6010, and sulfate by EPA method 300.0. Total iron, total manganese, and TPH-GRO and DRO were added to the analysis regimen at the recommendation of ITG and will be compared to future analytical results in order to assess the extent of metals precipitation and hydrocarbon oxidation that is occurring. Sampling for dissolved sodium was required by Mr. Jim Griswold of the New Mexico Oil Conservation Division in order to monitor the dissipation of injected sodium in the groundwater. A summary of the results and the corresponding laboratory analytical reports can be found in Table 3 and Appendix A, respectively.

Standard CRA groundwater monitoring methodology (Section 2.2) was utilized for these sampling events. During the December 2014 and January 2015 sampling events, field parameters collected from MW-1 indicated elevated pH levels ranging from 11.91 to 12.95. Field parameters collected from MW-6 during the two sampling events remained consistent with historical pH levels. Pre-ISCO measurements of pH in MW-1 and MW-6 were generally 7.1 to 7.2, respectively. Results from these sampling events are discussed below and also presented in **Table 4**.

- Dissolved Manganese
  - During the September 2014 annual sampling event, MW-1 and MW-6 exceeded the NMWQCC standard of 0.2 mg/L for dissolved manganese with concentrations of 0.34 mg/L and 0.44 mg/L, respectively. After the November ISCO injection event, the December 2014 sample resulted in a dissolved manganese concentration in MW-1 that was reduced to below laboratory detection limits, while the concentration in the down-gradient MW-6 remained above the standard and consistent with historical data.
  - During the January 2015 sampling event, the dissolved manganese concentration in MW-1 was again below the laboratory detection limit in MW-1 and while the concentration in the down-gradient MW-6 remained above the standard and consistent with historical data.
- Dissolved Iron
  - During the September 2014 annual sampling event, MW-1 exceeded the NMWQCC standard of 1.0 mg/L for dissolved iron with a concentration of 2.3 mg/L while MW-6 was below the standard with a concentration of 0.24 mg/L. After the November ISCO injection event, the December 2014 sample resulted in a dissolved iron concentration in

MW-1 was reduced to below the standard with a concentration of 0.0805 mg/L, while the concentration in the down-gradient MW-6 increased to 1.33 mg/L.

- During the January 2015 sampling event, the dissolved iron concentration was below the laboratory detection limit in both the MW-1 and MW-6 samples.

Section 5.0 Conclusions and Recommendations

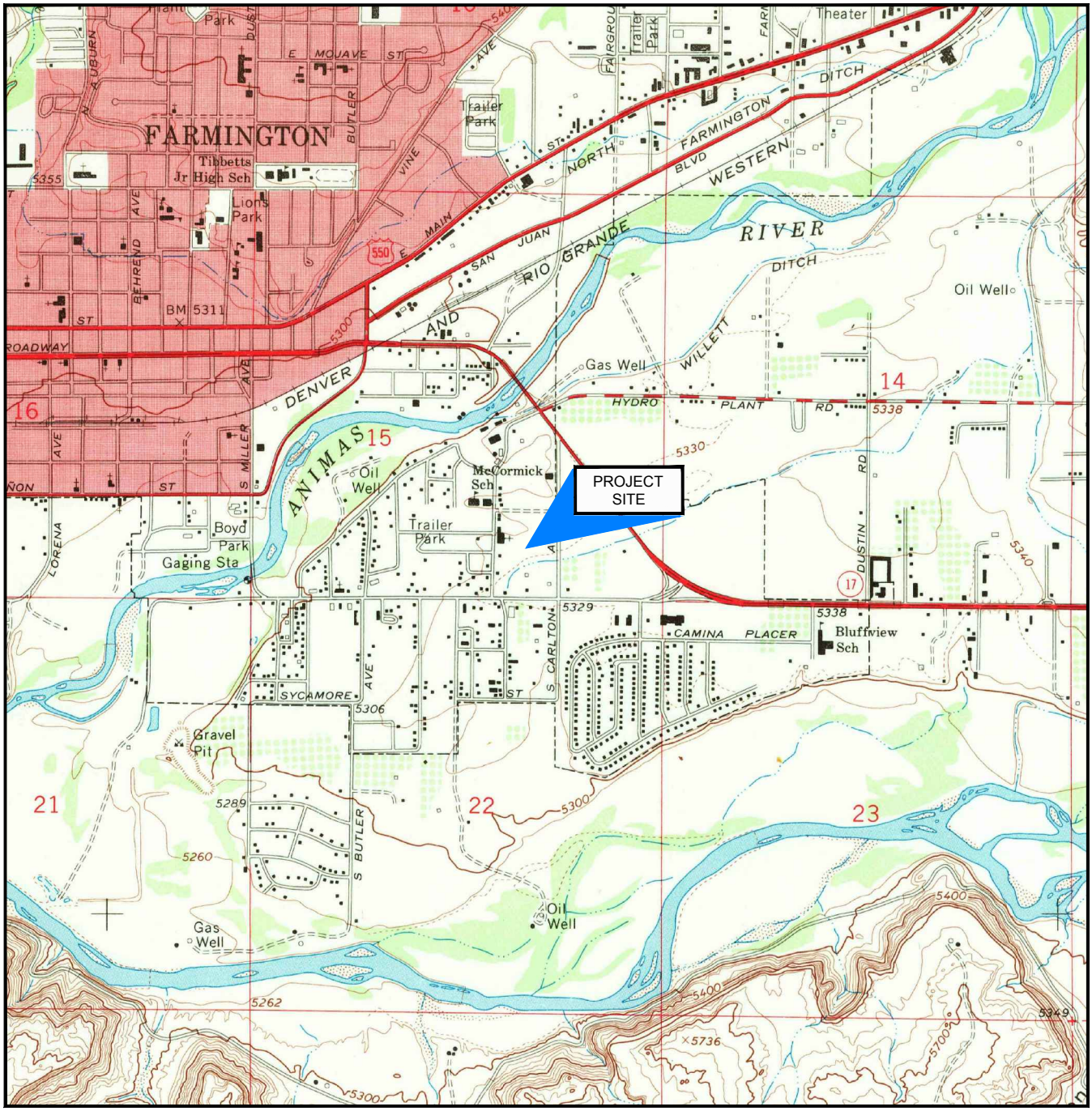
The ISCO treatment has been effective at reducing concentrations of dissolved-phase iron and manganese in monitoring well MW-1. The results of the December 2014 and January 2015 post- injection laboratory analyses showed that concentrations of these constituents have been reduced to levels below laboratory detection limits at MW-1. Dissolved iron and manganese concentrations at MW-6, hydraulically down-gradient from MW-1, have evidently yet to be influenced by the chemical injections in TW-1, TW-2 and MW-1. This may be due to the injection in MW-1 and at TW-1 pushing iron and manganese impacted groundwater towards MW-6, ahead of the ISCO chemicals, and also may be reflective of a more southern component to the groundwater flow direction which has been shown to fluctuate from west to southwest. The flow direction on site is subject to seasonal fluctuations and may be influenced by the irrigation canal bordering the Site to the south that flows during the growing season.

A second ISCO injection event is planned for March 2015. Batching proportions for introducing the catalyzed sodium persulfate into the injection points will be recalculated to better influence groundwater quality at MW-6. A post-injection groundwater sampling event for the Site will be incorporated into the San Juan Basin quarterly monitoring schedule in June 2015 to gauge the continued effectiveness of ISCO at reducing iron and manganese concentrations in Site groundwater.

Data from the post-ISCO monitoring event will be evaluated and the need for additional injection events and/or adjustment to sampling schedule will be assessed.

CRA recommends quarterly sampling of Site monitoring wells until all monitored groundwater quality parameters approach NMWQCC standards. When eight consecutive quarters of below standard concentrations of Site contaminants of concern has been measured, a remediation site closure petition will be submitted to the New Mexico Oil Conservation Division.

Figures



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

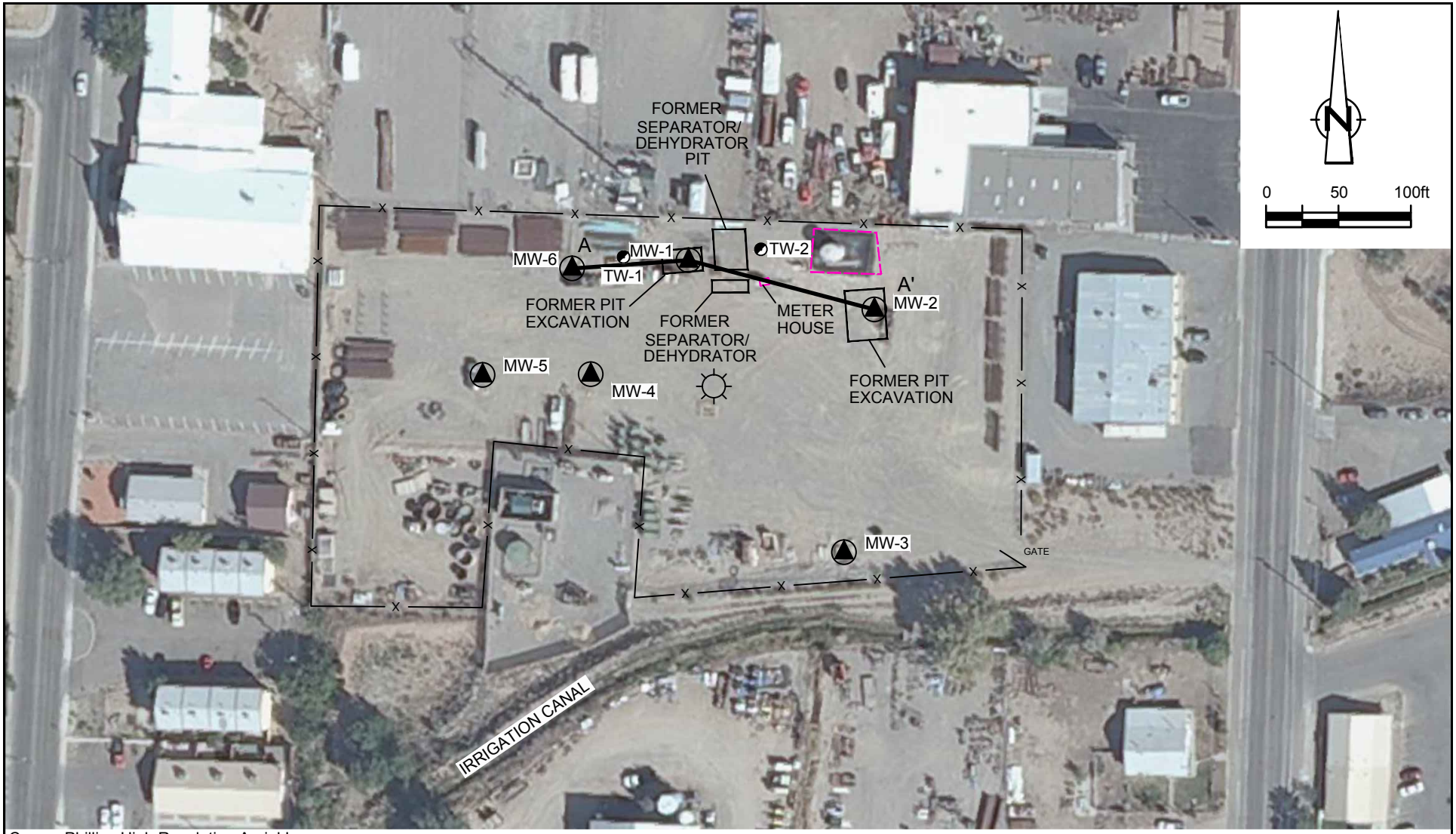
N

0 1000 2000ft

Figure 1

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

074938-95(005)GN-DL001_TOPO OCT 29/2014



ConocoPhillips High Resolution Aerial Imagery

LEGEND

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

Figure 2

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

074938-95(005)GN-DL002_SD MAR 31/2015

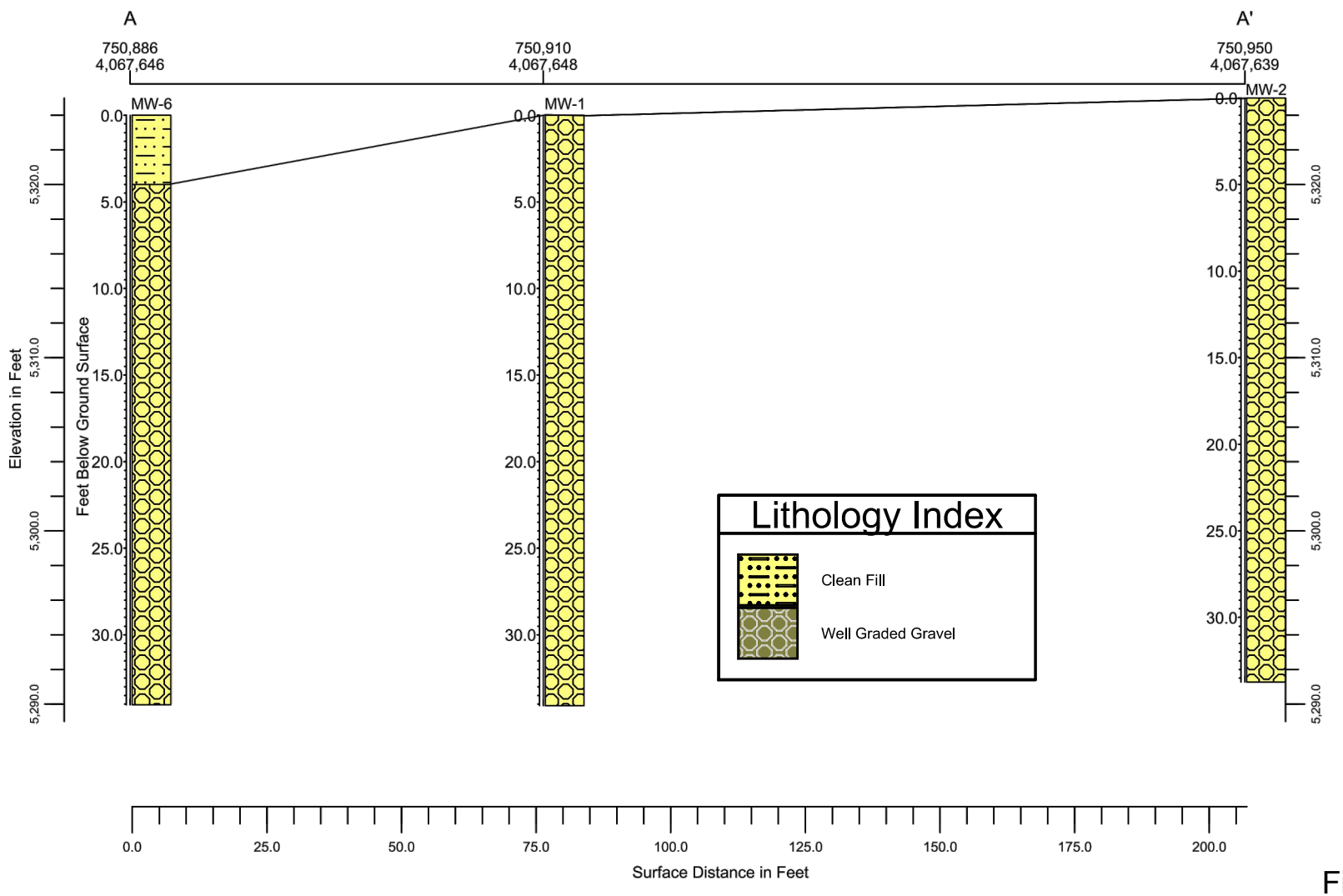
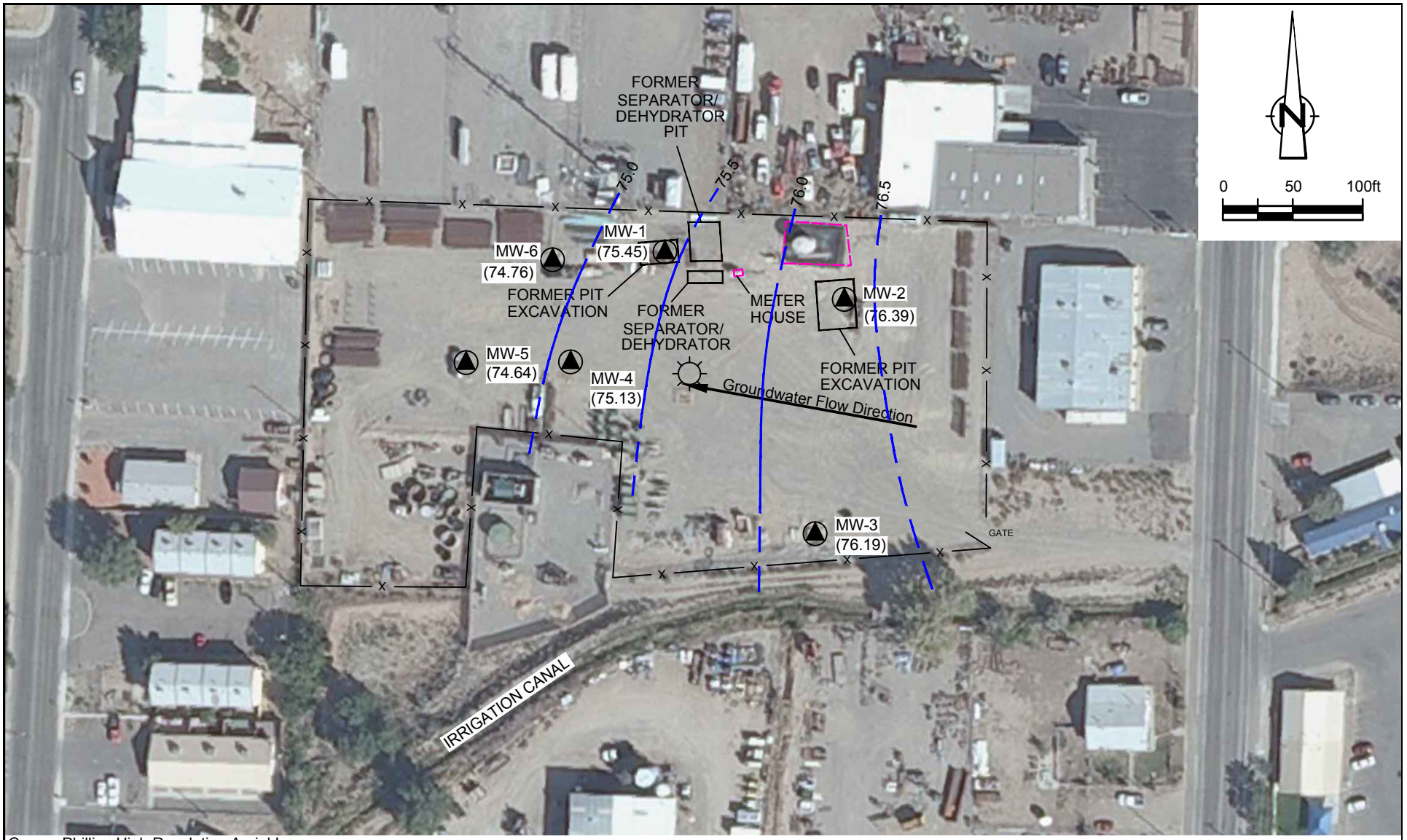


Figure 3

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



ConocoPhillips High Resolution Aerial Imagery

LEGEND

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

Figure 4

SEPTEMBER 2014 GROUNDWATER POTENTIOMETRIC SURFACE MAP
FARMINGTON B-COM No. 1E
FARMINGTON, NEW MEXICO
ConocoPhillips Company

074938-95(005)GN-DL004_GG MAR 31/2015

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.

TABLE 1

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

DATE	*Event/Action*	*ACTIVITY*
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.
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.

TABLE 1

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

DATE	*Event/Action*	*ACTIVITY*
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.
April 4, 2013	Monitor Well Sampling	Monitor Wells MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6 sampled and analyzed for dissolved manganese and dissolved iron. LNAPL sheen present in MW-1.
September 30, 2013	Monitor Well Sampling	Monitor Wells MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6 sampled and analyzed for dissolved manganese and dissolved iron. LNAPL sheen present in MW-1. Monitor Well MW-1 also sampled and analyzed for metals treatability study.
September 26, 2014	Monitor Well Sampling	Monitor Wells MW-1 and MW-6 sampled and analyzed for dissolved Mn, dissolved Fe, dissolved Na, Ca, Mg, Na, K, sulfate, and chloride. LNAPL sheen present in MW-1.
December 28, 2014	Post ISCO Groundwater Sampling	Monitor Wells MW-1 and MW-6 sampled and analyzed for dissolved Mn, dissolved Fe, dissolved Na, total Mn, total Fe, and TPH
January 28, 2015	Post ISCO Groundwater Sampling	Monitor Wells MW-1 and MW-6 sampled and analyzed for dissolved Mn, dissolved Fe, dissolved Na, total Mn, total Fe, and TPH

TABLE 2

MONITORING 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
				4/4/2013	Sheen	29.74	71.63
				9/30/2013	Sheen	24.92	76.45
				9/26/2014	Sheen	25.92	75.45
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
				4/4/2013	-	29.16	72.41
				9/30/2013	-	24.29	77.28
				9/26/2014	-	25.18	76.39

TABLE 2

MONITORING 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
				4/4/2013	-	30.52	71.58
				9/30/2013	-	25.27	76.83
				9/26/2014	-	25.91	76.19
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
				4/4/2013	-	30.46	70.94
				9/30/2013	-	25.55	75.85
				9/26/2014	-	26.27	75.13

TABLE 2

MONITORING 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
				4/4/2013	-	30.10	70.42
				9/30/2013	-	25.16	75.36
				9/26/2014	-	25.88	74.64
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
				4/4/2013	-	31.24	70.90
				9/30/2013	-	25.43	76.71
				9/26/2014	-	27.38	74.76

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

FIELD PARAMETERS SUMMARY
CONOCOPHILLIPS COMPANY
FARMINGTON B COM No. 1E
SAN JUAN COUNTY, NEW MEXICO

Well ID	Sample Date	Temperature (°C)	pH	TDS (g/L)	Conductivity (µS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)
MW-1	9/26/2014	18.30	7.17	0.824	1268	1.60	-198.0	3.50
	9/26/2014	18.23	7.17	0.810	1245	0.98	-210.3	3.75
	9/26/2014	18.15	7.18	0.800	1231	1.01	-221.4	4.00
	12/18/2014	18.93	12.95	10.310	15860	25.02	-166.1	2.00
	12/18/2014	19.28	12.80	8.800	15732	23.02	-161.7	2.50
	12/18/2014	19.35	12.76	10.270	15765	24.24	-159.5	3.00
	1/28/2015	18.78	11.91	4.202	6495	10.54	-36.4	1.75
	1/28/2015	18.78	12.01	3.378	5192	10.11	-48.4	2.25
	1/28/2015	18.76	12.06	3.249	5014	9.89	-57.4	2.75
MW-6	9/26/2014	17.65	7.22	0.712	1096	1.38	-39.5	2.75
	9/26/2014	17.65	7.21	0.712	1096	1.39	-42.7	3.00
	9/26/2014	17.62	7.21	0.711	1094	1.29	-45.9	3.25
	12/18/2014	18.09	7.83	0.933	1436	2.61	-148.7	1.25
	12/18/2014	18.28	7.86	0.975	1500	1.95	-158.7	1.75
	12/18/2014	18.31	7.87	0.985	1515	1.99	-161.7	2.25
	1/28/2015	17.73	7.52	0.868	1335	4.17	-122.1	1.50
	1/28/2015	17.70	7.52	0.862	1326	3.08	-125.1	2.00
	1/28/2015	17.60	7.52	0.860	1323	2.84	-125.3	2.50

Notes:
TDS = total dissolved solids
DO = dissolved oxygen
ORP = oxidation-reduction potential

TABLE 4

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)*	*TPH GRO (mg/L)*	*TPH DRO (mg/L)*	*Iron (dissolved) (mg/L)*	*Manganese (dissolved) (mg/L)*	*Sodium (dissolved) (mg/L)*	*Iron (total) (mg/L)*	*Manganese (total) (mg/L)*	*Nitrate (as N) (mg/L)*	*Sulfate (mg/L)*
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**NE**	**NE**	**1.0**	**0.2**	**NE**	**NE**	**NE**	**10**	**600**
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**	--	--	--	--	--
	GW-074938-040413-CM-MW-1	4/4/2013	(orig)	--	--	--	--	--	--	**1.8**	**0.47**	--	--	--	--	--
	GW-074938-093013-CM-MW-1	9/30/2013	(orig)	--	--	--	--	--	--	**1.7**	**0.29**	--	--	--	--	--
	GW-074938-092614-CM-MW-1	9/26/2014	(orig)	--	--	--	--	--	--	**2.3**	**0.34**	--	--	--	--	16.3
	--	11/5/2014	IN SITU CHEMICAL OXIDATION INJECTION EVENT													
	GW-074938-121814-CM-MW-1	12/18/2014	(orig)	--	--	--	--	< 0.5	17.6	0.0805	< 0.005	1,280	139	0.844	--	**1,420**
	GW-074938-012815-JW-MW-1	1/28/2015	(orig)	--	--	--	--	--	--	< 0.050	< 0.005	333.0	3.92	0.0335	--	217
MW-2	GW-074938-040413-CM-MW-2	4/4/2013	(orig)	--	--	--	--	--	--	< 0.05	0.046	--	--	--	--	--
	GW-074938-093013-CM-MW-2	9/30/2013	(orig)	--	--	--	--	--	--	< 0.05	0.0077	--	--	--	--	--
MW-3	GW-074938-121511-CB-MW-3	12/15/2011	(orig)	--	--	--	--	--	--	0.246	0.112	--	--	--	--	--
	GW-074938-040413-CM-MW-3	4/4/2013	(orig)	--	--	--	--	--	--	0.34	**0.28**	--	--	--	--	--
	GW-074938-093013-CM-MW-3	9/30/2013	(orig)	--	--	--	--	--	--	< 0.05	0.047	--	--	--	--	--

TABLE 4

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)*	*TPH GRO (mg/L)*	*TPH DRO (mg/L)*	*Iron (dissolved) (mg/L)*	*Manganese (dissolved) (mg/L)*	*Sodium (dissolved) (mg/L)*	*Iron (total) (mg/L)*	*Manganese (total) (mg/L)*	*Nitrate (as N) (mg/L)*	*Sulfate (mg/L)*
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**NE**	**NE**	**1.0**	**0.2**	**NE**	**NE**	**NE**	**10**	**600**
MW-4	GW-074938-040413-CM-MW-4	4/4/2013	(orig)	--	--	--	--	--	--	< 0.05	0.069	--	--	--	--	--
	GW-074938-093013-CM-MW-4	9/30/2013	(orig)	--	--	--	--	--	--	< 0.05	< 0.005	--	--	--	--	--
MW-5	GW-074938-040413-CM-MW-5	4/4/2013	(orig)	--	--	--	--	--	--	< 0.05	< 0.005	--	--	--	--	--
	GW-074938-040413-CM-DUP	4/4/2013	(Duplicate)	--	--	--	--	--	--	0.62*	0.025*	--	--	--	--	--
	GW-074938-093013-CM-MW-5	9/30/2013	(orig)	--	--	--	--	--	--	< 0.05	< 0.005	--	--	--	--	--
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	--	--	--	--	--
	GW-074938-040413-CM-MW-6	4/4/2013	(orig)	--	--	--	--	--	--	0.056	**0.33**	--	--	--	--	--
	GW-074938-093013-CM-MW-6	9/30/2013	(orig)	--	--	--	--	--	--	< 0.05	0.17	--	--	--	--	--
	GW-074938-093013-CM-DUP	9/30/2013	(Duplicate)	--	--	--	--	--	--	< 0.05	0.17	--	--	--	--	--
	GW-074938-092614-CM-MW-1	9/26/2014	(orig)	--	--	--	--	--	--	0.24	**0.44**	--	--	--	--	
	GW-074938-092614-CM-DUP	9/26/2014	(Duplicate)	--	--	--	--	--	--	0.27	**0.41**	--	--	--	--	--

TABLE 4

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)*	*TPH GRO (mg/L)*	*TPH DRO (mg/L)*	*Iron (dissolved) (mg/L)*	*Manganese (dissolved) (mg/L)*	*Sodium (dissolved) (mg/L)*	*Iron (total) (mg/L)*	*Manganese (total) (mg/L)*	*Nitrate (as N) (mg/L)*	*Sulfate (mg/L)*
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**NE**	**NE**	**1.0**	**0.2**	**NE**	**NE**	**NE**	**10**	**600**
MW-6 (cont.)	--	11/5/2014	IN SITU CHEMICAL OXIDATION INJECTION EVENT													
	GW-074938-121814-CM-MW-6	12/18/2014	(orig)	--	--	--	--	< 0.50	< 0.50	**1.33**	**0.268**	177	4.6	0.351	--	112
	GW-074938-121814-CM-MW-DUP	12/18/2014	(Duplicate)	--	--	--	--	--	--	**1.11**	**0.255**	166	--	--	--	112
	GW-074938-012815-JW-MW6	1/28/2015	(orig)	--	--	--	--	--	--	< 0.05	**0.402**	93.5	13.9	.0868	--	29.8

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
8. * = anomolous data
9. NE = not established

Appendix A

Groundwater Laboratory Analytical Reports

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

October 20, 2014

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

RE: Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

Dear Christine Mathews:
Enclosed are the analytical results for sample(s) received by the laboratory on September 27, 2014. 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.

REVISED

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: Angela Bown, COP Conestoga-Rovers & Associa
Angela Bown, Conestoga Rovers & Associates
Chris Fetters, COP Conestoga-Rovers & Associa
Jeff Walker, COP Conestoga-Rovers & Associa

Pace Analytical Services, Inc.
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CERTIFICATIONS

Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021

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SAMPLE SUMMARY

Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60179011001	**GW-074938-092614-CM-MW-1**	Water	09/26/14 08:40	09/27/14 08:10
60179011002	**GW-074938-092614-CM-MW-6**	Water	09/26/14 07:35	09/27/14 08:10
60179011003	**GW-074938-092614-CM-DUP**	Water	09/26/14 00:00	09/27/14 08:10

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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SAMPLE ANALYTE COUNT

Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60179011001	**GW-074938-092614-CM-MW-1**	EPA 6010	NDJ	4
		EPA 6010	TDS	3
		SM 2320B	CRT	2
		EPA 300.0	OL	2
60179011002	**GW-074938-092614-CM-MW-6**	EPA 6010	NDJ	4
		EPA 6010	TDS	3
		SM 2320B	CRT	2
		EPA 300.0	OL	2
60179011003	**GW-074938-092614-CM-DUP**	EPA 6010	TDS	3

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PROJECT NARRATIVE

Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

Method: **EPA 6010**
Description: 6010 MET ICP
Client: CRA Conoco New Mexico
Date: October 20, 2014

General Information:
2 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, where applicable, 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: MPRP/29131

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60179047001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1451858)
  - Calcium
  - Magnesium
  - Potassium
- MSD (Lab ID: 1451859)
  - Magnesium
  - Potassium

Additional Comments:

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PROJECT NARRATIVE

Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: CRA Conoco New Mexico
Date: October 20, 2014

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, where applicable, 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: MPRP/29163

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60179195005

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 1453412)
  - Sodium, Dissolved

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: CRA Conoco New Mexico
Date: October 20, 2014

General Information:
2 samples were analyzed for SM 2320B. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: CRA Conoco New Mexico
Date: October 20, 2014

General Information:
2 samples were analyzed for EPA 300.0. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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: WETA/31263

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 50104369001,60179052001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1455512)
  - Chloride

Additional Comments:

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

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ANALYTICAL RESULTS

Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

Sample: GW-074938-092614-CM-MW-1 **Lab ID: 60179011001** Collected: 09/26/14 08:40 Received: 09/27/14 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Calcium	**145**	mg/L	0.10	1	10/01/14 16:40	10/03/14 13:42	7440-70-2	
Magnesium	**26.1**	mg/L	0.050	1	10/01/14 16:40	10/03/14 13:42	7439-95-4	
Potassium	**5.3**	mg/L	0.50	1	10/01/14 16:40	10/03/14 13:42	7440-09-7	
Sodium	**93.5**	mg/L	0.50	1	10/01/14 16:40	10/03/14 13:42	7440-23-5	
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	**2.3**	mg/L	0.050	1	10/03/14 17:00	10/06/14 16:00	7439-89-6	
Manganese, Dissolved	**0.34**	mg/L	0.0050	1	10/03/14 17:00	10/06/14 16:00	7439-96-5	
Sodium, Dissolved	**95.3**	mg/L	0.50	1	10/03/14 17:00	10/06/14 16:00	7440-23-5	D9
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**613**	mg/L	20.0	1		10/08/14 12:41		
Alkalinity, Total as CaCO3	**613**	mg/L	20.0	1		10/08/14 12:41		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**71.9**	mg/L	5.0	5		10/08/14 23:08	16887-00-6	
Sulfate	**16.3**	mg/L	1.0	1		10/08/14 22:53	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

Sample: GW-074938-092614-CM-MW-6 **Lab ID: 60179011002** Collected: 09/26/14 07:35 Received: 09/27/14 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Calcium	**137**	mg/L	0.10	1	10/01/14 16:40	10/03/14 13:45	7440-70-2	
Magnesium	**26.7**	mg/L	0.050	1	10/01/14 16:40	10/03/14 13:45	7439-95-4	
Potassium	**3.9**	mg/L	0.50	1	10/01/14 16:40	10/03/14 13:45	7440-09-7	
Sodium	**73.2**	mg/L	0.50	1	10/01/14 16:40	10/03/14 13:45	7440-23-5	
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	**0.24**	mg/L	0.050	1	10/03/14 17:00	10/06/14 16:02	7439-89-6	
Manganese, Dissolved	**0.44**	mg/L	0.0050	1	10/03/14 17:00	10/06/14 16:02	7439-96-5	
Sodium, Dissolved	**73.6**	mg/L	0.50	1	10/03/14 17:00	10/06/14 16:02	7440-23-5	D9
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**500**	mg/L	20.0	1		10/08/14 12:47		
Alkalinity, Total as CaCO3	**500**	mg/L	20.0	1		10/08/14 12:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**67.5**	mg/L	5.0	5		10/08/14 23:24	16887-00-6	
Sulfate	**63.8**	mg/L	5.0	5		10/08/14 23:24	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

Sample: GW-074938-092614-CM-DUP **Lab ID: 60179011003** Collected: 09/26/14 00:00 Received: 09/27/14 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	**0.27**	mg/L	0.050	1	10/03/14 17:00	10/06/14 16:05	7439-89-6	
Manganese, Dissolved	**0.41**	mg/L	0.0050	1	10/03/14 17:00	10/06/14 16:05	7439-96-5	
Sodium, Dissolved	**73.4**	mg/L	0.50	1	10/03/14 17:00	10/06/14 16:05	7440-23-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

QC Batch: MPRP/29131 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60179011001, 60179011002

METHOD BLANK: 1451856 Matrix: Water
Associated Lab Samples: 60179011001, 60179011002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	mg/L	ND	0.10	10/03/14 12:48	
Magnesium	mg/L	ND	0.050	10/03/14 12:48	
Potassium	mg/L	ND	0.50	10/03/14 12:48	
Sodium	mg/L	ND	0.50	10/03/14 12:48	

LABORATORY CONTROL SAMPLE: 1451857

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	10	10.3	103	80-120	
Magnesium	mg/L	10	10.3	103	80-120	
Potassium	mg/L	10	10.4	104	80-120	
Sodium	mg/L	10	10.5	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1451858 1451859

Parameter	Units	60179047001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	155000 ug/L	10	10	162	163	73	81	75-125	0	20	M1
Magnesium	mg/L	53800 ug/L	10	10	85.3	86.0	315	322	75-125	1	20	M1
Potassium	mg/L	19000 ug/L	10	10	40.0	40.9	210	219	75-125	2	20	M1
Sodium	mg/L	15500 ug/L	10	10	24.7	25.1	92	96	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

QC Batch: MPRP/29163 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60179011001, 60179011002, 60179011003

METHOD BLANK: 1453409 Matrix: Water
Associated Lab Samples: 60179011001, 60179011002, 60179011003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron, Dissolved	mg/L	ND	0.050	10/06/14 15:47	
Manganese, Dissolved	mg/L	ND	0.0050	10/06/14 15:47	
Sodium, Dissolved	mg/L	ND	0.50	10/06/14 15:47	

LABORATORY CONTROL SAMPLE: 1453410

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Dissolved	mg/L	10	10.0	100	80-120	
Manganese, Dissolved	mg/L	1	0.98	98	80-120	
Sodium, Dissolved	mg/L	10	10.2	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1453411 1453412

Parameter	Units	60179195005 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	254 ug/L	10	10	10.5	10.2	102	99	75-125	3	20	
Manganese, Dissolved	mg/L	363 ug/L	1	1	1.4	1.3	100	95	75-125	3	20	
Sodium, Dissolved	mg/L	111000 ug/L	10	10	120	114	90	32	75-125	5	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

QC Batch: WET/50739 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60179011001, 60179011002

METHOD BLANK: 1455710 Matrix: Water
Associated Lab Samples: 60179011001, 60179011002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	10/08/14 10:27	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	20.0	10/08/14 10:27	

LABORATORY CONTROL SAMPLE: 1455711

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	503	101	90-110	

SAMPLE DUPLICATE: 1455768

Parameter	Units	60179161002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	3740	3820	2	10	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	ND		10	

SAMPLE DUPLICATE: 1455769

Parameter	Units	60179252002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	406	413	2	10	
Alkalinity,Bicarbonate (CaCO3)	mg/L	406	413	2	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

QC Batch: WETA/31263 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60179011001, 60179011002

METHOD BLANK: 1456503 Matrix: Water
Associated Lab Samples: 60179011001, 60179011002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	10/08/14 19:33	
Sulfate	mg/L	ND	1.0	10/08/14 19:33	

LABORATORY CONTROL SAMPLE: 1456504

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	93	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1455512 1455513

Parameter	Units	60179052001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	7600	2500	2500	10700	10400	123	111	80-120	3	15	M1
Sulfate	mg/L	ND	2500	2500	2500	2440	100	97	80-120	3	15	

MATRIX SPIKE SAMPLE: 1455514

Parameter	Units	50104369001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	82.9	50	139	112	80-120	
Sulfate	mg/L	114	50	167	107	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

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.

PQL - Practical Quantitation 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.

ANALYTE QUALIFIERS

D9	Dissolved result is greater than the total. Data is within laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074938B Com No. 1 E Farmington
Pace Project No.: 60179011

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60179011001	**GW-074938-092614-CM-MW-1**	EPA 3010	MPRP/29131	EPA 6010	ICP/21916
60179011002	**GW-074938-092614-CM-MW-6**	EPA 3010	MPRP/29131	EPA 6010	ICP/21916
60179011001	**GW-074938-092614-CM-MW-1**	EPA 3010	MPRP/29163	EPA 6010	ICP/21947
60179011002	**GW-074938-092614-CM-MW-6**	EPA 3010	MPRP/29163	EPA 6010	ICP/21947
60179011003	**GW-074938-092614-CM-DUP**	EPA 3010	MPRP/29163	EPA 6010	ICP/21947
60179011001	**GW-074938-092614-CM-MW-1**	SM 2320B	WET/50739		
60179011002	**GW-074938-092614-CM-MW-6**	SM 2320B	WET/50739		
60179011001	**GW-074938-092614-CM-MW-1**	EPA 300.0	WETA/31263		
60179011002	**GW-074938-092614-CM-MW-6**	EPA 300.0	WETA/31263		

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Sample Condition Upon Receipt
ESI Tech Spec Client

WO#: 60179011

60179011

Client Name: COP CBA NM

Optional
Proj Due Date:
Proj Name:

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

Tracking #: 8061 8726 3623 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-239~~ / T-194 **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1, 2

Temperature should be above freezing to 6°C

Date and initials of person examining contents: ~~JM~~ 9/27/14 905

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: JM / 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: _____

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

Start: 900	Start:
End: 905	End:
Temp:	Temp:

Project Manager Review: DAF Date: 9/29/14

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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:	CRA COP 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:	Jeff Walker, Angela Bown
Purchase Order No.:	
Project Name:	B Com No. 1 E Farmington
Project Number:	074938

Section C Invoice Information:

Attention:	CRA
Company Name:	Angela Bown
Address:	
Pace Quote Reference:	
Pace Project Manager:	Alice Flanagan
Pace Profile #:	7801, 19

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

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	6010Dissolved Fe,Mn,Na	6010 Ca, Mg, Na, K	Alkalinity, bicarbonate	300.0 Sulfate, Chloride									Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 60179011
1	GW-074938-092614-CM-MW-1	WT	G			9/26/14	0840		3	1		2						X	X	X	X								001		1(BP3N) 1(BP3F) 1(BP3N)
2	GW-074938-092614-CM-MW-6	WT	G			9/26/14	0735		3	1		2						X	X	X	X								002		↓ 1(BP3F)
3	GW-074938-092614-CM-DUP	WT	G			9/26/14	—		1			1						X											003		
4																															
5																															
6																															
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)
METALS SAMPLES WERE FIELD FILTERED	CRA	9-26-14	1330		9/27/14	810	1.2	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: EALE KAVACK

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 9-26-14

*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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January 09, 2015

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

RE: Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

Dear Christine Mathews:
Enclosed are the analytical results for sample(s) received by the laboratory on December 20, 2014. 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.

REVISED sample name

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: Angela Bown, COP Conestoga-Rovers & Associa
Angela Bown, Conestoga Rovers & Associates
Chris Fetters, COP Conestoga-Rovers & Associa
Jeff Walker, COP Conestoga-Rovers & Associa

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CERTIFICATIONS

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60185143001	**GW-074938-121814-CM-MW-6**	Water	12/18/14 16:35	12/20/14 09:00
60185143002	**GW-074938-121814-CM-MW-1**	Water	12/18/14 16:45	12/20/14 09:00
60185143003	**GW-074938-121814-CM-DUP**	Water	12/18/14 00:00	12/20/14 09:00
60185143004	**TB-074938-121814-CM-001**	Water	12/18/14 16:50	12/20/14 09:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60185143001	**GW-074938-121814-CM-MW-6**	EPA 8015B	JDE	3
		EPA 5030B/8015B	JTK	3
		EPA 6010	SMW	2
		EPA 6010	SMW	3
		EPA 300.0	TDB	1
60185143002	**GW-074938-121814-CM-MW-1**	EPA 8015B	JDE	3
		EPA 5030B/8015B	JTK	3
		EPA 6010	SMW	2
		EPA 6010	SMW	3
		EPA 300.0	TDB	1
60185143003	**GW-074938-121814-CM-DUP**	EPA 6010	SMW	3
60185143004	**TB-074938-121814-CM-001**	EPA 5030B/8015B	JTK	3

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PROJECT NARRATIVE

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

Method: **EPA 8015B**
Description: 8015B Diesel Range Organics
Client: CRA Conoco New Mexico
Date: January 09, 2015

General Information:
2 samples were analyzed for EPA 8015B. 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 3510C 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.

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, where applicable, 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: OEXT/47636

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

Method: **EPA 5030B/8015B**
Description: Gasoline Range Organics
Client: CRA Conoco New Mexico
Date: January 09, 2015

General Information:
3 samples were analyzed for EPA 5030B/8015B. 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, where applicable, 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: GCV/4965

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

Method: **EPA 6010**
Description: 6010 MET ICP
Client: CRA Conoco New Mexico
Date: January 09, 2015

General Information:
2 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, where applicable, 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:

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PROJECT NARRATIVE

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: CRA Conoco New Mexico
Date: January 09, 2015

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, where applicable, 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:

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PROJECT NARRATIVE

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: CRA Conoco New Mexico
Date: January 09, 2015

General Information:
2 samples were analyzed for EPA 300.0. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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ANALYTICAL RESULTS

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

Sample: GW-074938-121814-CM-MW-6 **Lab ID: 60185143001** Collected: 12/18/14 16:35 Received: 12/20/14 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO	ND	mg/L	0.50	1	12/24/14 00:00	12/29/14 04:15		
Surrogates								
p-Terphenyl (S)	65	%	28-127	1	12/24/14 00:00	12/29/14 04:15	92-94-4	
n-Tetracosane (S)	63	%	22-121	1	12/24/14 00:00	12/29/14 04:15	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		12/22/14 22:12		
Surrogates								
4-Bromofluorobenzene (S)	100	%	82-114	1		12/22/14 22:12	460-00-4	
Preservation pH	**1.0**		0.10	1		12/22/14 22:12		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron	**4600**	ug/L	50.0	1	12/23/14 10:30	12/29/14 15:29	7439-89-6	
Manganese	**351**	ug/L	5.0	1	12/23/14 10:30	12/26/14 12:23	7439-96-5	
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	**1330**	ug/L	50.0	1	12/23/14 10:30	12/29/14 14:03	7439-89-6	
Manganese, Dissolved	**268**	ug/L	5.0	1	12/23/14 10:30	12/29/14 14:03	7439-96-5	
Sodium, Dissolved	**177000**	ug/L	500	1	12/23/14 10:30	12/29/14 14:03	7440-23-5	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**112**	mg/L	10.0	10		01/06/15 23:32	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

Sample: GW-074938-121814-CM-MW-1 **Lab ID: 60185143002** Collected: 12/18/14 16:45 Received: 12/20/14 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO	**17.6**	mg/L	0.45	1	12/24/14 00:00	12/29/14 04:23		
Surrogates								
p-Terphenyl (S)	80	%	28-127	1	12/24/14 00:00	12/29/14 04:23	92-94-4	
n-Tetracosane (S)	60	%	22-121	1	12/24/14 00:00	12/29/14 04:23	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		12/22/14 22:28		
Surrogates								
4-Bromofluorobenzene (S)	98	%	82-114	1		12/22/14 22:28	460-00-4	
Preservation pH	**1.0**		0.10	1		12/22/14 22:28		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron	**139000**	ug/L	250	5	12/23/14 10:30	12/29/14 15:39	7439-89-6	
Manganese	**844**	ug/L	25.0	5	12/23/14 10:30	12/26/14 12:27	7439-96-5	
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	**80.5**	ug/L	50.0	1	12/23/14 10:30	12/29/14 14:06	7439-89-6	
Manganese, Dissolved	ND	ug/L	5.0	1	12/23/14 10:30	12/29/14 14:06	7439-96-5	
Sodium, Dissolved	**1280000**	ug/L	5000	10	12/23/14 10:30	12/29/14 14:39	7440-23-5	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**1420**	mg/L	100	100		01/08/15 00:37	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

Sample: GW-074938-121814-CM-DUP **Lab ID: 60185143003** Collected: 12/18/14 00:00 Received: 12/20/14 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	**1110**	ug/L	50.0	1	12/23/14 10:30	12/29/14 14:08	7439-89-6	
Manganese, Dissolved	**255**	ug/L	5.0	1	12/23/14 10:30	12/29/14 14:08	7439-96-5	
Sodium, Dissolved	**166000**	ug/L	500	1	12/23/14 10:30	12/29/14 14:08	7440-23-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

Sample: TB-074938-121814-CM-001 **Lab ID: 60185143004** Collected: 12/18/14 16:50 Received: 12/20/14 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		12/22/14 22:45		
Surrogates								
4-Bromofluorobenzene (S)	101	%	82-114	1		12/22/14 22:45	460-00-4	
Preservation pH	**1.0**		0.10	1		12/22/14 22:45		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

QC Batch: GCV/4965 Analysis Method: EPA 5030B/8015B
QC Batch Method: EPA 5030B/8015B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60185143001, 60185143002, 60185143004

METHOD BLANK: 1498914 Matrix: Water
Associated Lab Samples: 60185143001, 60185143002, 60185143004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/L	ND	0.50	12/22/14 21:38	
4-Bromofluorobenzene (S)	%	102	82-114	12/22/14 21:38	

LABORATORY CONTROL SAMPLE: 1498915

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/L	1	0.78	78	68-110	
4-Bromofluorobenzene (S)	%			102	82-114	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

QC Batch: MPRP/30289
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 60185143001, 60185143002

METHOD BLANK: 1499234 Matrix: Water
Associated Lab Samples: 60185143001, 60185143002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron	ug/L	ND	50.0	12/29/14 14:57	
Manganese	ug/L	ND	5.0	12/26/14 11:18	

LABORATORY CONTROL SAMPLE: 1499235

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	10000	10100	101	80-120	
Manganese	ug/L	1000	1020	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1499236 1499237

Parameter	Units	60185031002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	460	10000	10000	10500	10600	100	101	75-125	1	20	
Manganese	ug/L	75.1	1000	1000	1060	1080	98	100	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

QC Batch: MPRP/30290 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60185143001, 60185143002, 60185143003

METHOD BLANK: 1499240 Matrix: Water
Associated Lab Samples: 60185143001, 60185143002, 60185143003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron, Dissolved	ug/L	ND	50.0	12/29/14 13:25	
Manganese, Dissolved	ug/L	ND	5.0	12/29/14 13:25	
Sodium, Dissolved	ug/L	ND	500	12/29/14 13:25	

LABORATORY CONTROL SAMPLE: 1499241

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Dissolved	ug/L	10000	9370	94	80-120	
Manganese, Dissolved	ug/L	1000	968	97	80-120	
Sodium, Dissolved	ug/L	10000	9370	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1499242 1499243

Parameter	Units	60185128002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron, Dissolved	ug/L	ND	10000	10000	9310	9240	93	92	75-125	1	20	
Manganese, Dissolved	ug/L	1370	1000	1000	2290	2290	93	93	75-125	0	20	
Sodium, Dissolved	ug/L	110000	10000	10000	121000	121000	108	112	75-125	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

QC Batch: OEXT/47636 Analysis Method: EPA 8015B
QC Batch Method: EPA 3510C Analysis Description: EPA 8015B
Associated Lab Samples: 60185143001, 60185143002

METHOD BLANK: 1499677 Matrix: Water
Associated Lab Samples: 60185143001, 60185143002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO	mg/L	ND	0.50	12/29/14 04:00	
n-Tetracosane (S)	%	52	22-121	12/29/14 04:00	
p-Terphenyl (S)	%	61	28-127	12/29/14 04:00	

LABORATORY CONTROL SAMPLE: 1499678

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO	mg/L	12.5	7.8	62	44-129	
n-Tetracosane (S)	%			72	22-121	
p-Terphenyl (S)	%			55	28-127	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

QC Batch: WETA/32419 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60185143001, 60185143002

METHOD BLANK: 1502619 Matrix: Water
Associated Lab Samples: 60185143001, 60185143002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	01/06/15 21:18	

METHOD BLANK: 1503509 Matrix: Water
Associated Lab Samples: 60185143001, 60185143002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	01/07/15 20:53	

LABORATORY CONTROL SAMPLE: 1502620

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.7	95	90-110	

LABORATORY CONTROL SAMPLE: 1503510

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.7	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1502621 1502622

Parameter	Units	60185104001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	149	50	50	205	201	113	105	80-120	2	15	

MATRIX SPIKE SAMPLE: 1502623

Parameter	Units	60185107001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	148	50	202	108	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

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.

PQL - Practical Quantitation 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: GCV/4965

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

Batch: OEXT/47636

[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: 074938 B Com No.1 E Farmington
Pace Project No.: 60185143

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60185143001	**GW-074938-121814-CM-MW-6**	EPA 3510C	OEXT/47636	EPA 8015B	GCSV/18175
60185143002	**GW-074938-121814-CM-MW-1**	EPA 3510C	OEXT/47636	EPA 8015B	GCSV/18175
60185143001	**GW-074938-121814-CM-MW-6**	EPA 5030B/8015B	GCV/4965		
60185143002	**GW-074938-121814-CM-MW-1**	EPA 5030B/8015B	GCV/4965		
60185143004	**TB-074938-121814-CM-001**	EPA 5030B/8015B	GCV/4965		
60185143001	**GW-074938-121814-CM-MW-6**	EPA 3010	MPRP/30289	EPA 6010	ICP/22646
60185143002	**GW-074938-121814-CM-MW-1**	EPA 3010	MPRP/30289	EPA 6010	ICP/22646
60185143001	**GW-074938-121814-CM-MW-6**	EPA 3010	MPRP/30290	EPA 6010	ICP/22647
60185143002	**GW-074938-121814-CM-MW-1**	EPA 3010	MPRP/30290	EPA 6010	ICP/22647
60185143003	**GW-074938-121814-CM-DUP**	EPA 3010	MPRP/30290	EPA 6010	ICP/22647
60185143001	**GW-074938-121814-CM-MW-6**	EPA 300.0	WETA/32419		
60185143002	**GW-074938-121814-CM-MW-1**	EPA 300.0	WETA/32419		

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Sample Condition Upon Receipt
ESI Tech Spec Client

WO# : 60185143

60185143

Client Name: CRA COP

Optional
Proj Due Date:
Proj Name:

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

Tracking #: 6268 7064 4769 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-239 / T-194 **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 4.3

Temperature should be above freezing to 6°C

Date and initials of person examining contents: JB 12/20

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	MW-1 3291 initial pH 4.0 added 2.5mL Final pH 2.0
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): 12/08/14		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: AAF Date: 12/22/14

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

Start: 1120	Start:
End: 1130	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:	CRA COP 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:	Jeff Walker, Angela Bown
Purchase Order No.:	4071724
Project Name:	B Com No. 1 E Farmington
Project Number:	074938

Section C — Invoice Information:

Attention:	CRA
Company Name:	Angela Bown
Address:	
Pace Quote Reference:	
Pace Project Manager:	Alice Flanagan
Pace Profile #:	7801, 19

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	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	Analysis Test Y/N: 6010 Dissolved Fe,Mn,Na	8015 TPH GRO	8015 TPH DRO	300.0 Sulfate	Total Fe, Mn						Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																												60185143
1	GW-074938-121814-CM-MW-C	WT	G			12.18.14	1635		8	3		2	3					X	X	X	X	X	BP3U		BP3N	BP3U	(2)AG4A (3)DG4A	001
2	GW-074938-121814-CM-MW-1	WT	G			12.18.14	1645		8	3		2	3					X	X	X	X	X						002
3	~~GW-074938-121814-CM-MW-2~~	~~WT~~	~~G~~			~~12.18.14~~	~~—~~		~~8~~	~~3~~		~~2~~	~~3~~																
4	GW-074938-121814-CM-DUP	WT	G			12.18.14	—		1			1						X											003
5	TB-074938-121814-CM-001	WT				12.18.14	1650		3				3						X				(3) DG 8H					004
6																												
7																												
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Dissolved metals field filtered	[signature] /CRA	12.19.14	1200	[signature]	12/20	0900	4.3	Y	Y	Y
Total metals not filtered and added to suite of analytes.										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Christine Mathews

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 12/19/14

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

Pace Analytical Services, Inc.
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February 09, 2015

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

RE: Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

Dear Christine Mathews:
Enclosed are the analytical results for sample(s) received by the laboratory on January 30, 2015. 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: Angela Bown, COP Conestoga-Rovers & Associa
Angela Bown, Conestoga Rovers & Associates
Chris Fetters, COP Conestoga-Rovers & Associa
Jeff Walker, COP Conestoga-Rovers & Associa

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CERTIFICATIONS

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021

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SAMPLE SUMMARY

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60187181001	**012815-GW074938-MW-1-SW**	Water	01/28/15 14:05	01/30/15 08:45
60187181002	**012815-GW074938-MW6-SW**	Water	01/28/15 14:25	01/30/15 08:45
60187181003	**TB-074938-012815-JW-001**	Water	01/21/15 08:00	01/30/15 08:45

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SAMPLE ANALYTE COUNT

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60187181001	**012815-GW074938-MW-1-SW**	EPA 8015B	JDE	3
		EPA 5030B/8015B	JTK	3
		EPA 6010	NDJ	2
		EPA 6010	NDJ	3
		EPA 300.0	OL	1
60187181002	**012815-GW074938-MW6-SW**	EPA 8015B	JDE	3
		EPA 5030B/8015B	JTK	3
		EPA 6010	NDJ	2
		EPA 6010	NDJ	3
		EPA 300.0	OL	1
60187181003	**TB-074938-012815-JW-001**	EPA 5030B/8015B	JTK	3

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PROJECT NARRATIVE

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

Method: **EPA 8015B**
Description: 8015B Diesel Range Organics
Client: CRA Conoco New Mexico
Date: February 09, 2015

General Information:
2 samples were analyzed for EPA 8015B. 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 3510C 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.

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, where applicable, 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: OEXT/47995

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

Method: **EPA 5030B/8015B**
Description: Gasoline Range Organics
Client: CRA Conoco New Mexico
Date: February 09, 2015

General Information:
3 samples were analyzed for EPA 5030B/8015B. 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, where applicable, 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: GCV/4986

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

Additional Comments:

Pace Analytical Services, Inc.
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PROJECT NARRATIVE

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

Method: **EPA 6010**
Description: 6010 MET ICP
Client: CRA Conoco New Mexico
Date: February 09, 2015

General Information:
2 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, where applicable, 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:

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

PROJECT NARRATIVE

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved (LF)
Client: CRA Conoco New Mexico
Date: February 09, 2015

General Information:
2 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, where applicable, 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: MPRP/30662

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60187181001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 1514634)
  - Sodium, Dissolved

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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

PROJECT NARRATIVE

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: CRA Conoco New Mexico
Date: February 09, 2015

General Information:
2 samples were analyzed for EPA 300.0. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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ANALYTICAL RESULTS

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

Sample: 012815-GW074938-MW-1-SW **Lab ID: 60187181001** Collected: 01/28/15 14:05 Received: 01/30/15 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO	**14.2**	mg/L	0.45	1	01/30/15 00:00	02/03/15 16:38		
Surrogates								
p-Terphenyl (S)	65	%	28-127	1	01/30/15 00:00	02/03/15 16:38	92-94-4	
n-Tetracosane (S)	52	%	22-121	1	01/30/15 00:00	02/03/15 16:38	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		02/02/15 13:05		
Surrogates								
4-Bromofluorobenzene (S)	99	%	82-114	1		02/02/15 13:05	460-00-4	
Preservation pH	**1.0**		0.10	1		02/02/15 13:05		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron	**3920**	ug/L	50.0	1	01/30/15 15:30	02/02/15 10:47	7439-89-6	
Manganese	**33.5**	ug/L	5.0	1	01/30/15 15:30	02/02/15 10:47	7439-96-5	
6010 MET ICP, Dissolved (LF)	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	ND	ug/L	50.0	1	01/30/15 15:30	02/02/15 11:14	7439-89-6	
Manganese, Dissolved	ND	ug/L	5.0	1	01/30/15 15:30	02/02/15 11:14	7439-96-5	
Sodium, Dissolved	**333000**	ug/L	500	1	01/30/15 15:30	02/02/15 12:43	7440-23-5	M1
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**217**	mg/L	20.0	20		02/06/15 12:24	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

Sample: 012815-GW074938-MW6-SW **Lab ID: 60187181002** Collected: 01/28/15 14:25 Received: 01/30/15 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO	ND	mg/L	0.45	1	01/30/15 00:00	02/03/15 16:46		
Surrogates								
p-Terphenyl (S)	91	%	28-127	1	01/30/15 00:00	02/03/15 16:46	92-94-4	
n-Tetracosane (S)	83	%	22-121	1	01/30/15 00:00	02/03/15 16:46	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		02/02/15 13:22		
Surrogates								
4-Bromofluorobenzene (S)	104	%	82-114	1		02/02/15 13:22	460-00-4	
Preservation pH	**1.0**		0.10	1		02/02/15 13:22		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron	**13900**	ug/L	50.0	1	01/30/15 15:30	02/02/15 10:54	7439-89-6	
Manganese	**868**	ug/L	5.0	1	01/30/15 15:30	02/02/15 10:54	7439-96-5	
6010 MET ICP, Dissolved (LF)	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	ND	ug/L	50.0	1	01/30/15 15:30	02/02/15 11:21	7439-89-6	
Manganese, Dissolved	**402**	ug/L	5.0	1	01/30/15 15:30	02/02/15 11:21	7439-96-5	
Sodium, Dissolved	**93500**	ug/L	500	1	01/30/15 15:30	02/02/15 12:50	7440-23-5	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**29.8**	mg/L	2.0	2		02/06/15 15:38	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

Sample: TB-074938-012815-JW-001 **Lab ID: 60187181003** Collected: 01/21/15 08:00 Received: 01/30/15 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		02/02/15 13:38		
Surrogates								
4-Bromofluorobenzene (S)	103	%	82-114	1		02/02/15 13:38	460-00-4	
Preservation pH	**1.0**		0.10	1		02/02/15 13:38		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

QC Batch: GCV/4986 Analysis Method: EPA 5030B/8015B
QC Batch Method: EPA 5030B/8015B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60187181001, 60187181002, 60187181003

METHOD BLANK: 1515155 Matrix: Water
Associated Lab Samples: 60187181001, 60187181002, 60187181003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/L	ND	0.50	02/02/15 12:22	
4-Bromofluorobenzene (S)	%	101	82-114	02/02/15 12:22	

LABORATORY CONTROL SAMPLE: 1515156

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/L	1	0.82	82	68-110	
4-Bromofluorobenzene (S)	%			102	82-114	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

QC Batch: MPRP/30660 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60187181001, 60187181002

METHOD BLANK: 1514622 Matrix: Water
Associated Lab Samples: 60187181001, 60187181002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron	ug/L	ND	50.0	02/02/15 10:45	
Manganese	ug/L	ND	5.0	02/02/15 10:45	

LABORATORY CONTROL SAMPLE: 1514623

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	10000	9500	95	90-111	
Manganese	ug/L	1000	1080	108	91-108	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1514624 1514625

Parameter	Units	60187181001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	3920	10000	10000	13300	13300	94	94	75-125	0	20	
Manganese	ug/L	33.5	1000	1000	1090	1090	106	106	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

QC Batch: MPRP/30662 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60187181001, 60187181002

METHOD BLANK: 1514631 Matrix: Water
Associated Lab Samples: 60187181001, 60187181002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron, Dissolved	ug/L	ND	50.0	02/02/15 11:12	
Manganese, Dissolved	ug/L	ND	5.0	02/02/15 11:12	
Sodium, Dissolved	ug/L	ND	500	02/02/15 12:39	

LABORATORY CONTROL SAMPLE: 1514632

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Dissolved	ug/L	10000	9620	96	80-120	
Manganese, Dissolved	ug/L	1000	1090	109	80-120	
Sodium, Dissolved	ug/L	10000	9840	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1514633 1514634

Parameter	Units	60187181001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron, Dissolved	ug/L	ND	10000	10000	9470	9460	94	94	75-125	0	20	
Manganese, Dissolved	ug/L	ND	1000	1000	1080	1080	108	107	75-125	1	20	
Sodium, Dissolved	ug/L	333000	10000	10000	341000	332000	81	-9	75-125	3	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

QC Batch: OEXT/47995 Analysis Method: EPA 8015B
QC Batch Method: EPA 3510C Analysis Description: EPA 8015B
Associated Lab Samples: 60187181001, 60187181002

METHOD BLANK: 1514426 Matrix: Water
Associated Lab Samples: 60187181001, 60187181002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO	mg/L	ND	0.50	02/03/15 16:23	
n-Tetracosane (S)	%	78	22-121	02/03/15 16:23	
p-Terphenyl (S)	%	77	28-127	02/03/15 16:23	

LABORATORY CONTROL SAMPLE: 1514427

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO	mg/L	12.5	7.5	60	44-129	
n-Tetracosane (S)	%			71	22-121	
p-Terphenyl (S)	%			73	28-127	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

QC Batch: WETA/32768 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60187181001, 60187181002

METHOD BLANK: 1516862 Matrix: Water
Associated Lab Samples: 60187181001, 60187181002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	02/06/15 11:54	

LABORATORY CONTROL SAMPLE: 1516863

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.1	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1516864 1516865

Parameter	Units	60187181001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	217	100	100	329	328	111	110	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

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.

PQL - Practical Quantitation 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: OEXT/47995

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

Batch: GCV/4986

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

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074938 B Com No.1 E Farmington
Pace Project No.: 60187181

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60187181001	**012815-GW074938-MW-1-SW**	EPA 3510C	OEXT/47995	EPA 8015B	GCSV/18339
60187181002	**012815-GW074938-MW6-SW**	EPA 3510C	OEXT/47995	EPA 8015B	GCSV/18339
60187181001	**012815-GW074938-MW-1-SW**	EPA 5030B/8015B	GCV/4986		
60187181002	**012815-GW074938-MW6-SW**	EPA 5030B/8015B	GCV/4986		
60187181003	**TB-074938-012815-JW-001**	EPA 5030B/8015B	GCV/4986		
60187181001	**012815-GW074938-MW-1-SW**	EPA 3010	MPRP/30660	EPA 6010	ICP/22891
60187181002	**012815-GW074938-MW6-SW**	EPA 3010	MPRP/30660	EPA 6010	ICP/22891
60187181001	**012815-GW074938-MW-1-SW**	EPA 3010	MPRP/30662	EPA 6010	ICP/22892
60187181002	**012815-GW074938-MW6-SW**	EPA 3010	MPRP/30662	EPA 6010	ICP/22892
60187181001	**012815-GW074938-MW-1-SW**	EPA 300.0	WETA/32768		
60187181002	**012815-GW074938-MW6-SW**	EPA 300.0	WETA/32768		

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www.pacelabs.com

Sample Condition Upon Receipt
ESI Tech Spec Client

WO#: 60187181

60187181

Client Name: CRA COP NM

Optional
Proj Due Date:
Proj Name:

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

Tracking #: 6262 7065 9669 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-239 / T-194 **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.3

Temperature should be above freezing to 6°C

Date and initials of person examining contents: JB 1/30

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. 3 Day
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): 1/21/15	☒Yes ☐No ☐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: _____

Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps.	
Start: 1010	Start:
End: 1016	End:
Temp:	Temp:

Project Manager Review: MAF Date: 1/30/15

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical
www.pacelabs.com

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

Section A Required Client Information:

Company:	CRA COP 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~~ 3 Day

Section B Required Project Information:

Report To:	Christine Mathews
Copy To:	Jeff Walker, Angela Bown
Purchase Order No.:	4071724
Project Name:	B Com No. 1 E Farmington
Project Number:	074938

Section C Invoice Information:

Attention:	CRA
Company Name:	Angela Bown
Address:	
Pace Quote Reference:	
Pace Project Manager:	Alice Flanagan
Pace Profile #:	7801, 19

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

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	$Na_2S_2C_3$	Methanol	Other	Analysis Test Y/N	6010 Dissolved Fe,Mn,Na	8015 TPH GRO	8015 TPH DRO	300.0 Sulfate	Total Fe, Mn	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	~~GW074938-0128~~ 01/28/15																								
2	012815-GW074938-MW-1-JW	WT	G	1/28/15	1405	1/28/15	1405		5	4		1						X	X	X	X	X			60187181
3	012815-GW074938-MW-2-JW	WT	G	1/28/15	1425	1/28/15	1425		5	4		1						X	X	X	X	X			BP2N (2)AG4H BP3N BP3N (3)DG4H
4																									
5	TB-074938-012815-JW-001	WT				1/28/15			3				3					X							(2)DG4H
6																									
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)
Dissolved Metals NOT field filtered - Please filter! Total Metals not field filtered	JW Walker	1/29/15	1455	Pace	1/30	0845	2.3	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

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

*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.

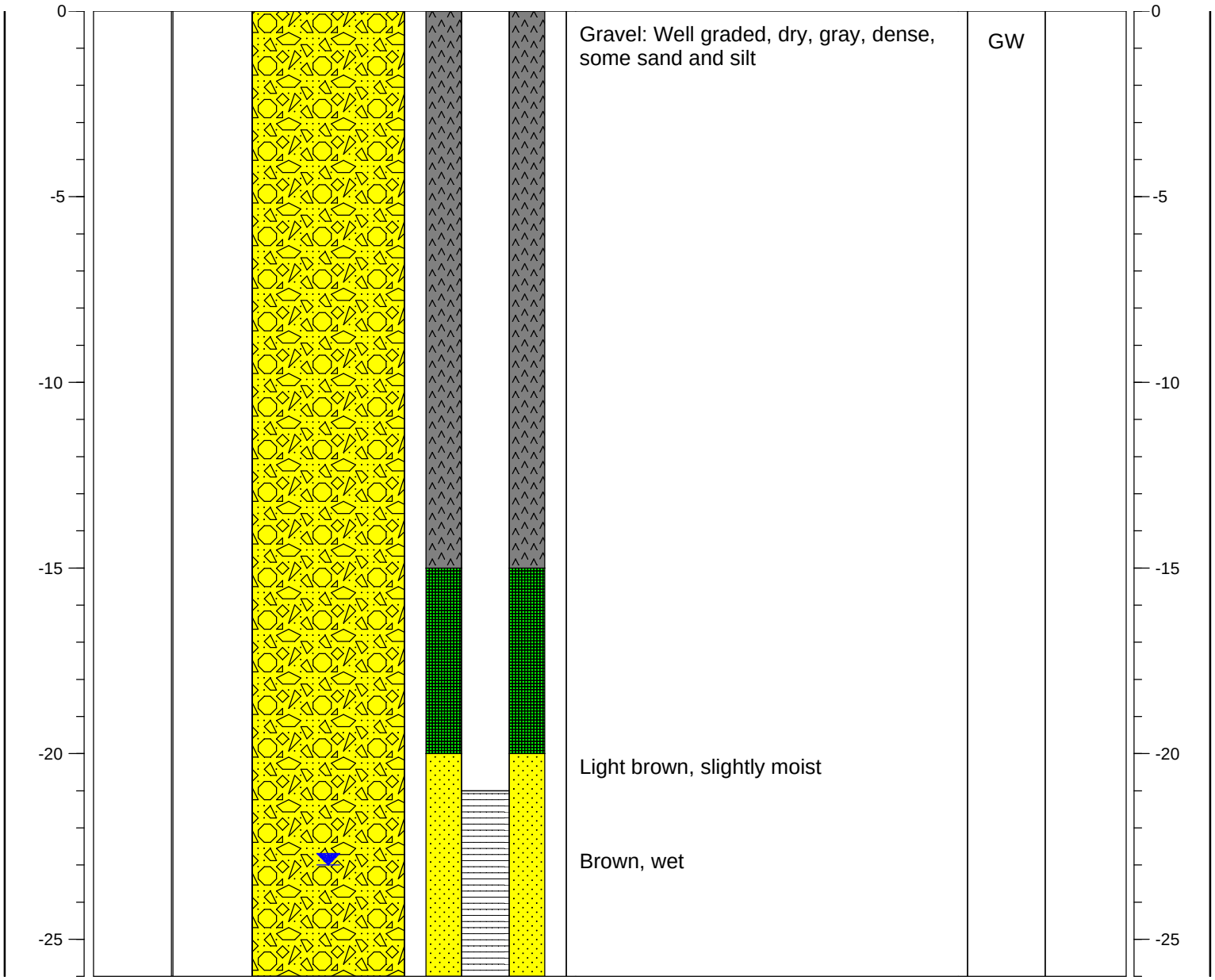
Appendix B

Boring Logs – Temporary Injection Well

PROJECT NAME: Farmington B Com No. 1E
LOCATION: Farmington, New Mexico
FIELD LOGGED BY: Jeff Walker
SURFACE ELEVATION (msl): N/A
GROUNDWATER ELEVATION (msl): 23' bgs
REMARKS:
COORDINATES: 36° 43' 17.12", -108° 11' 26.70"

SOIL BORING NO: TW-1
DRILL TYPE: Speedstar 50K
Air Rotary Casing Hammer
BORE HOLE DIAMETER: 9 5/8"
DRILLED BY: National EWP
DATE/TIME HOLE STARTED: 10/17/2014 @ 0930
DATE/TIME HOLE COMPLETED: 10/17/2014 @ 1200

DEPTH (bgs) - ft			STRATAGRAPHIC SEQUENCE	COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol		DEPTH (bgs) - ft
0					Gravel: Well graded, dry, gray, dense, some sand and silt	GW		0
-5								-5
-10								-10
-15								-15
-20					Light brown, slightly moist			-20
					Brown, wet			
-25								-25



TD = 26' bgs

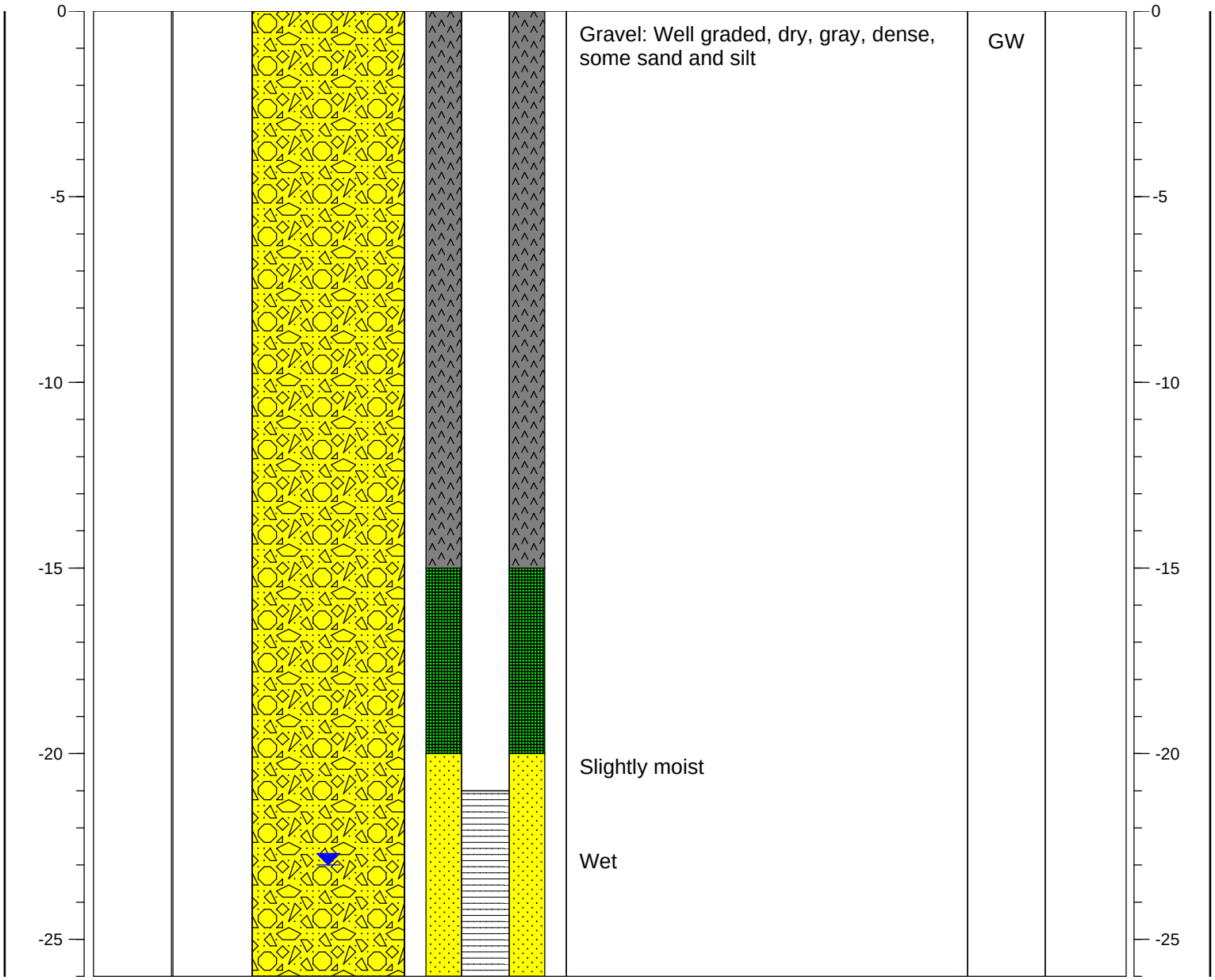
CONESTOGA-ROVERS & ASSOCIATES

BORING LOG AND WELL COMPLETION FORM

PROJECT NAME: Farmington B Com No. 1E
LOCATION: Farmington, New Mexico
FIELD LOGGED BY: Jeff Walker
SURFACE ELEVATION (msl): N/A
GROUNDWATER ELEVATION (msl): 23' bgs
REMARKS:
COORDINATES: 36° 43' 17.18", -108° 11' 26.49"

SOIL BORING NO: TW-2
DRILL TYPE: Speedstar 50K
Air Rotary Casing Hammer
BORE HOLE DIAMETER: 9 5/8"
DRILLED BY: National EWP
DATE/TIME HOLE STARTED: 10/17/2014 @ 1300
DATE/TIME HOLE COMPLETED: 10/17/2014 @ 1600

DEPTH (bgs) - ft			STRATAGRAPHIC SEQUENCE	COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol		DEPTH (bgs) - ft
0					Gravel: Well graded, dry, gray, dense, some sand and silt	GW		0
-5								-5
-10								-10
-15								-15
-20					Slightly moist			-20
					Wet			
-25								-25



TD = 26' bgs

CONESTOGA-ROVERS & ASSOCIATES

BORING LOG AND WELL COMPLETION FORM