3R – 430

2014 AGWMR

04 / 16 / 2015

John F. (Rick) Greiner, CPG, P.G.
ConocoPhillips Company
Risk Management & Remediation Program
Manager/Director Corp. Waste Management Program
600 N. Dairy Ashford, MA 1004
Houston, TX 77079
Phone: 281-293-3264
E-mail: Rick.Greiner@conocophillips.com

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-430, 2014 Annual Groundwater Monitoring Report

Dear Mr. von Gonten:

Enclosed is the 2014 Annual Groundwater Monitoring Report for the Wilmuth No. 1 site. This report, prepared by Conestoga-Rovers & Associates (CRA), contains the results of groundwater monitoring from March, June, September, and December 2014.

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 Wilmuth No. 1
San Juan County, New Mexico
API# 30-045-10370
NMOCD# 3R-430

Prepared for: ConocoPhillips Company

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

February • 074937 • Report No. 5

Partners in Sustainability

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Section 1.0 Introduction

This report presents the results of quarterly groundwater monitoring events conducted during 2014 by Conestoga-Rovers & Associates, Inc. (CRA) at the ConocoPhillips Company (ConocoPhillips) Wilmuth No. 1 remediation site located north of Aztec, New Mexico (Site). The Site is located on private land leased to ConocoPhillips and is situated in Section 26, Township 31N, Range 11W, of San Juan County, New Mexico (**Figure 1**). Geographical coordinates for the Site are 36.864823° North and 107.964516° West. A Site vicinity map and Site plan are included as **Figures 1** and **2,** respectively.

1.1 Background

The Wilmuth No. 1 natural gas well was spudded in 1958 by El Paso Natural Gas Company. Meridian Oil, Inc., a subsidiary of Burlington Resources, Inc. (Burlington), took over operation of the well on November 1, 1986. ConocoPhillips acquired Burlington on March 31, 2006.

A release of approximately 22 barrels (bbls) of produced water occurred within the bermed area surrounding the produced water tank on May 17, 2001. Twenty bbls were later recovered. A release of condensate occurred on December 17, 2002 from a corrosion hole in the condensate tank. Burlington excavated a total of 85 cubic yards of impacted soil and disposed of it at JFJ landfarm, located in Aztec, NM.

ConocoPhillips personnel notified the New Mexico Oil Conservation Division (NMOCD) in December 2009 of groundwater seeping into two separate areas that were undergoing excavation to remove stained soil discovered during line tie-in procedures. Four groundwater monitoring wells were subsequently installed under the supervision of Tetra Tech in April, 2010. A generalized geologic cross section was produced using boring logs from monitoring well installations at the Site. The cross section is presented as **Figure 3**. Tetra Tech began quarterly sampling immediately following development of the wells by collecting a baseline round of groundwater samples on April 8, 2010.

On June 15, 2011, Site consulting responsibilities were transferred from Tetra Tech to CRA of Albuquerque, NM.

The Site natural gas well was plugged and abandoned in March 2014. Associated equipment, including the separator, produced water and condensate tanks, and pump jack, were also removed. A metering station does remain on the site.

The most recent sampling event took place on December 15, 2014. This sampling event marks the 20th consecutive round of quarterly sampling at the Site. A historical timeline is presented in **Table 1**.

Section 2.0 Monitoring Summary, Sampling Methodology, and analytical Results

2.1 Monitoring Summary

Groundwater quality monitoring events were conducted on April 3, June 19, September 15, and December 15, 2014 at the Wilmuth No. 1 site.

2.2 Groundwater Monitoring Methodology

Prior to collection of groundwater samples from monitoring wells MW-1, MW-2, MW-3, and MW-4, depth to groundwater in each well was determined using an oil/water interface probe. Groundwater elevation data are summarized in **Table 2**. Groundwater elevations measured during each 2014 sampling event were used to create groundwater potentiometric surface maps for the Site (**Figures 4, 5, 6** and **7,** respectively). Using these data, it was determined that the groundwater flow direction at the Site is to the southwest, consistent with historical data.

During the 2014 quarterly groundwater monitoring events, Site monitoring wells were purged of at least 3 casing volumes of groundwater using 1.5-inch diameter, polyethylene, dedicated bailers. While bailing each well, groundwater parameter data, including temperature, pH, conductivity, dissolved oxygen, and oxidation-reduction potential were collected using a YSI 556 multi-parameter Sonde. Field parameters are summarized on **Table 3**.

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, KS for analysis. Samples were analyzed for total dissolved solids (TDS) by SM 2540C and dissolved manganese by EPA Method 6010.

2.3 Groundwater 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). The NMWQCC groundwater quality standard for dissolved manganese is 0.2 mg/L.

Results of the 2014 groundwater monitoring events that exceed the NMWQCC standards are discussed below.

June 2014

- **Dissolved Manganese:** Groundwater collected from all Site monitoring wells was found to be above the standard for dissolved manganese during June 2014. Dissolved manganese concentrations were 0.96 mg/L, 1.3 mg/L, 1.5 mg/L, and 1.6 mg/L for wells MW-1, MW-2, MW-3, and MW-4, respectively.

September 2014

- **Dissolved Manganese:** Groundwater collected from all Site monitoring wells was found to be above the standard for dissolved manganese during September 2014. Dissolved manganese concentrations were 1.04 mg/L, 1.53 mg/L, 1.79 mg/L, and 1.82 mg/L for wells MW-1, MW-2, MW-3, and MW-4, respectively.

December 2014

- **Dissolved Manganese:** Groundwater collected from all Site monitoring wells was found to be above the standard for dissolved manganese during December 2013. Dissolved manganese concentrations were 1.03 mg/L, 1.31 mg/L, 1.82 mg/L, and 1.82 mg/L for wells MW-1, MW-2, MW-3, and MW-4, respectively.

Historical analytical results are summarized in **Table 4**. The corresponding laboratory analytical reports, including quality control summaries, are included in **Appendix A**.

Section 3.0 Conclusions and Recommendations

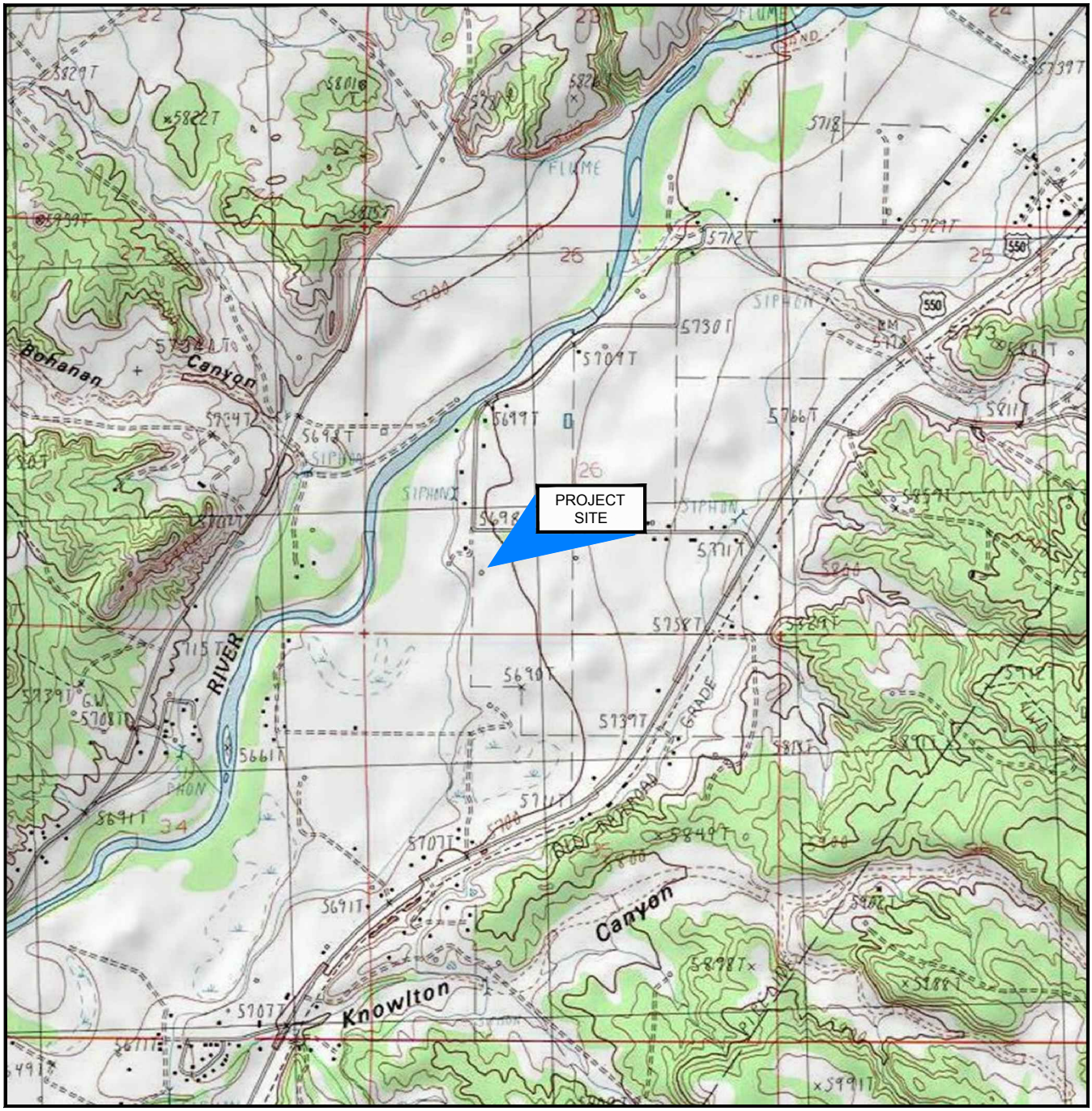
BTEX analysis was discontinued at the Site following the December 14, 2011 groundwater quality monitoring event, which represented the eighth consecutive quarterly sampling event with BTEX constituents below laboratory detection limits.

Groundwater samples from all Site monitoring wells have continually exceeded the NMWQCC groundwater quality standard for dissolved manganese, which has remained stable over time in all Site monitoring wells. Groundwater samples from all Site monitoring wells have intermittently exceeded the standard for TDS; however, the December 2014 sampling event marked seven consecutive quarters of below standard TDS concentrations. If the March 2015 monitoring event indicates concentrations of TDS below NMWQCC standards, TDS analysis will be discontinued.

CRA recommends the continued quarterly groundwater monitoring for dissolved manganese and TDS. CRA also recommends the installation of an up-gradient monitoring well to assess background groundwater conditions at the site. The proposed location of this up-gradient monitoring well is depicted on the Site Plan (Figure 2). Site closure will be requested when eight consecutive quarters of data within compliance levels or background concentrations have been achieved.

The next groundwater monitoring event at the Site is scheduled for March 2014.

Figures



SOURCE: USGS 7.5 MINUTE QUAD
"CEDAR HILL AND AZTEC, NEW MEXICO"

N

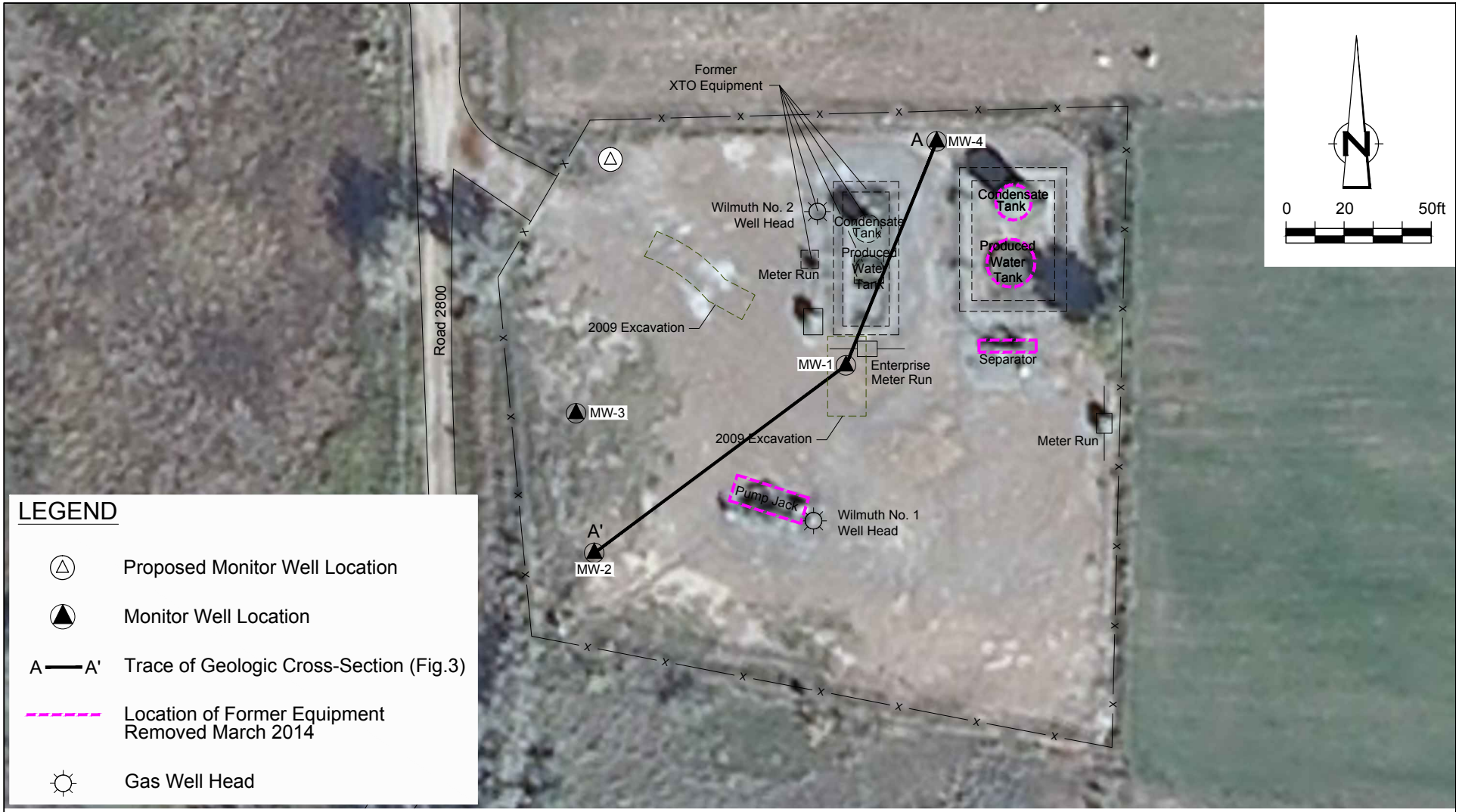
0 1000 2000ft

Figure 1

SITE VICINITY MAP
WILMUTH No. 1 NATURAL GAS WELL SITE
SECTION 26, T31N-R11W, SAN JUAN COUNDY, NEW MEXICO
ConocoPhillips Company

CRA

074937-95(005)GN-DL001_TOPO OCT 21/2014



ConocoPhillips high resolution aerial imagery 2008.

Figure 2

SITE PLAN
WILMUTH No. 1 NATURAL GAS WELL SITE
SECTION 26, T31-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

CRA

074937-95(005)GN-DL002_SD JAN 19/2015

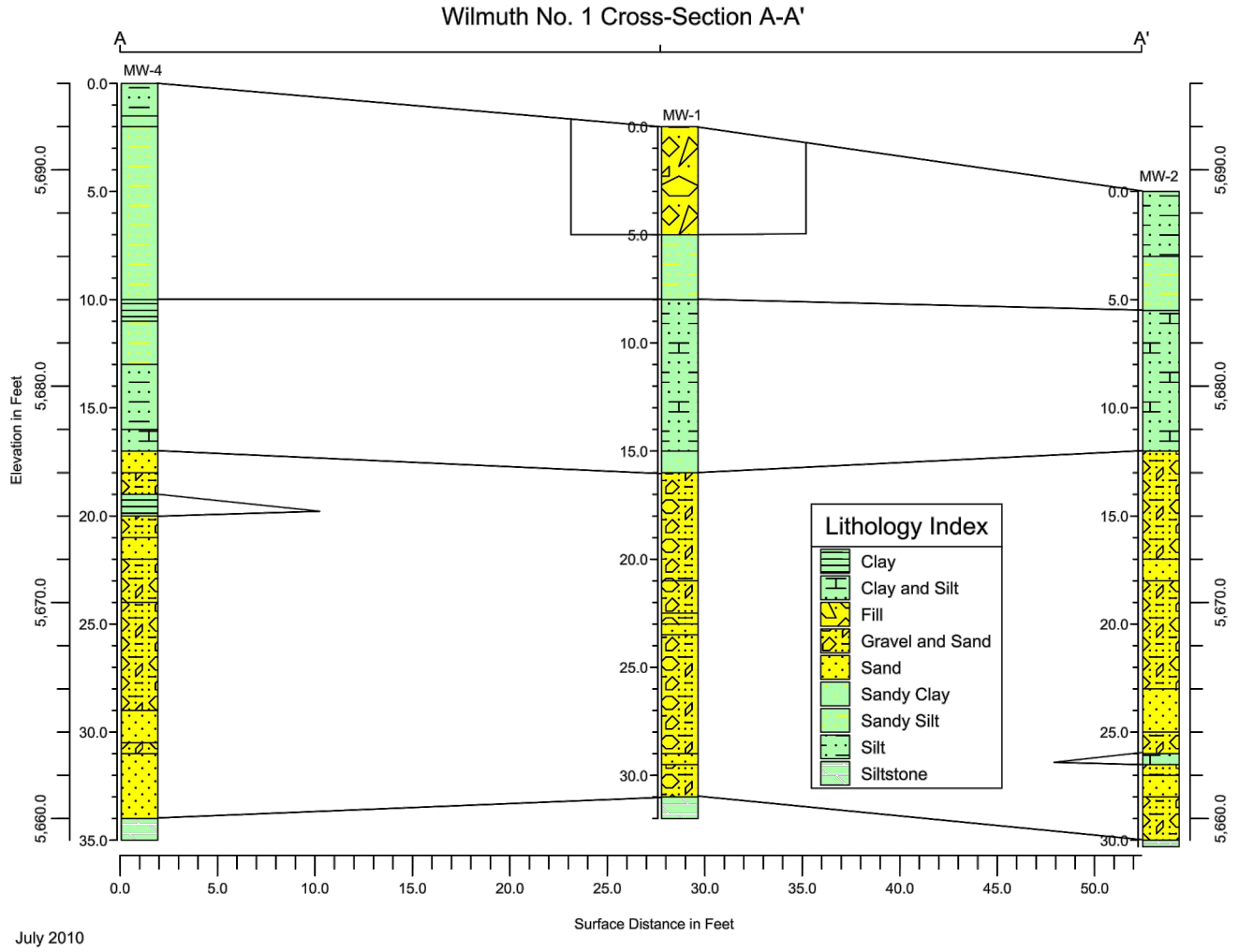


Figure 3

GEOLOGICAL CROSS SECTION
WILMUTH NO. 1 NATURAL GAS WELL SITE
SECTION 26, T31-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074937-95(005)GN-DL003_XSEC OCT 21/2014

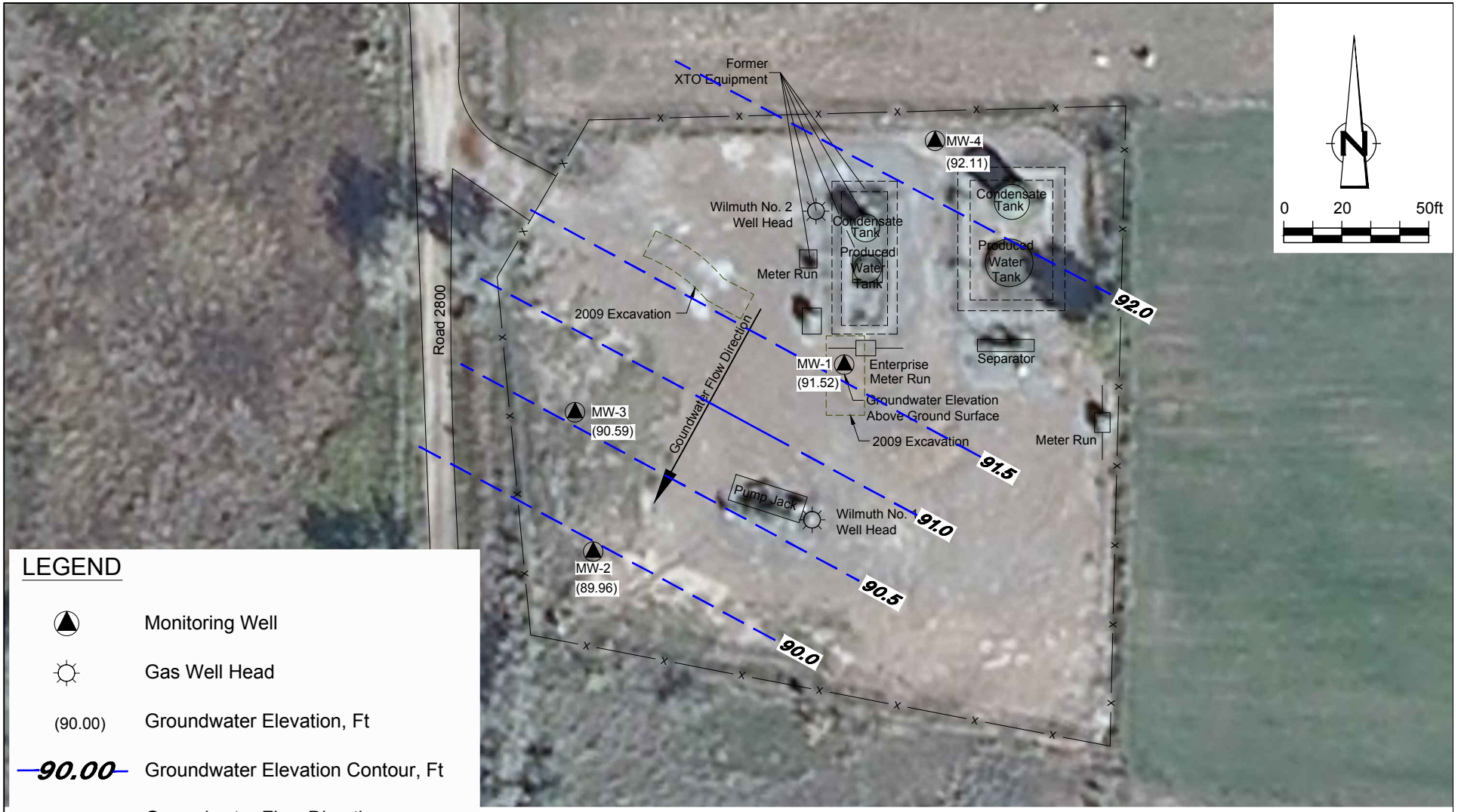


Figure 4

APRIL 2014 GROUNDWATER POTENTIOMETRIC SURFACE MAP
WILMUTH No. 1 NATURAL GAS WELL PRODUCTION SITE
SECTION 26, T31-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074937-95(005)GN-DL004_GG FEB 6/2015

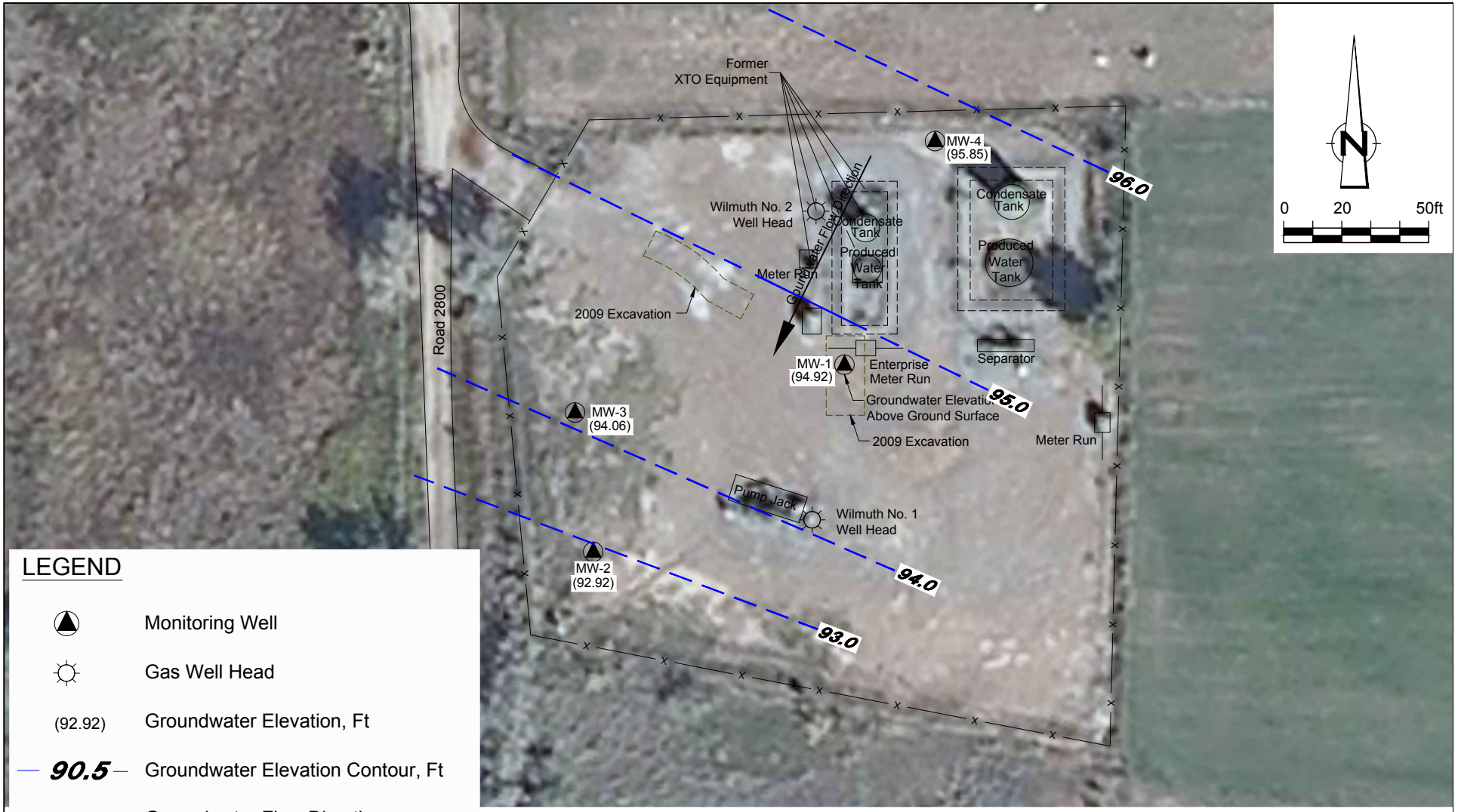


Figure 5

JUNE 2014 GROUNDWATER POTENTIOMETRIC SURFACE MAP
WILMUTH No. 1 NATURAL GAS WELL PRODUCTION SITE
SECTION 26, T31-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074937-95(005)GN-DL004_GG FEB 6/2015

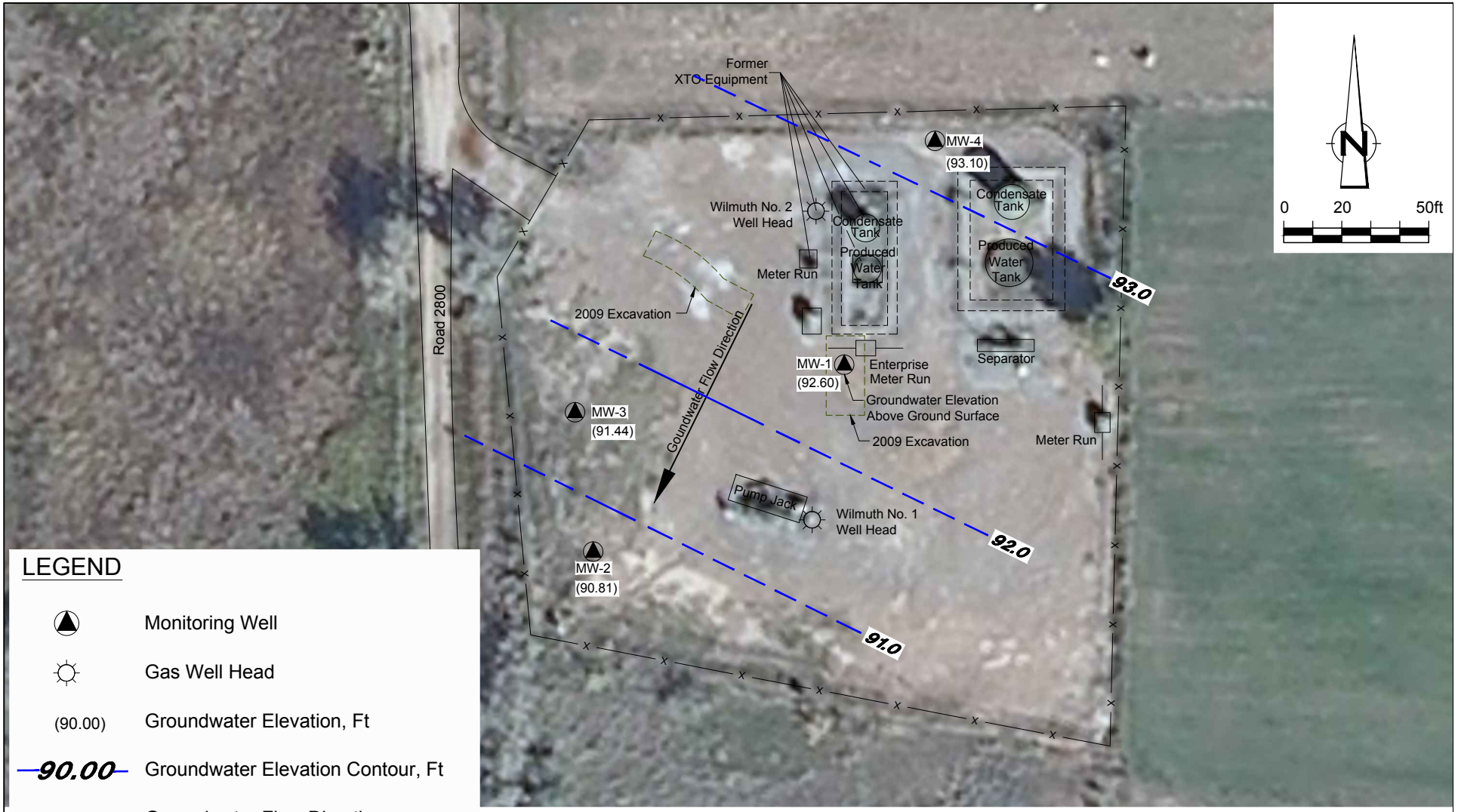


Figure 7

DECEMBER 2014 GROUNDWATER POTENTIOMETRIC SURFACE MAP
WILMUTH No. 1 NATURAL GAS WELL PRODUCTION SITE
SECTION 26, T31-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074937-95(005)GN-DL004_GG JAN 19/2015

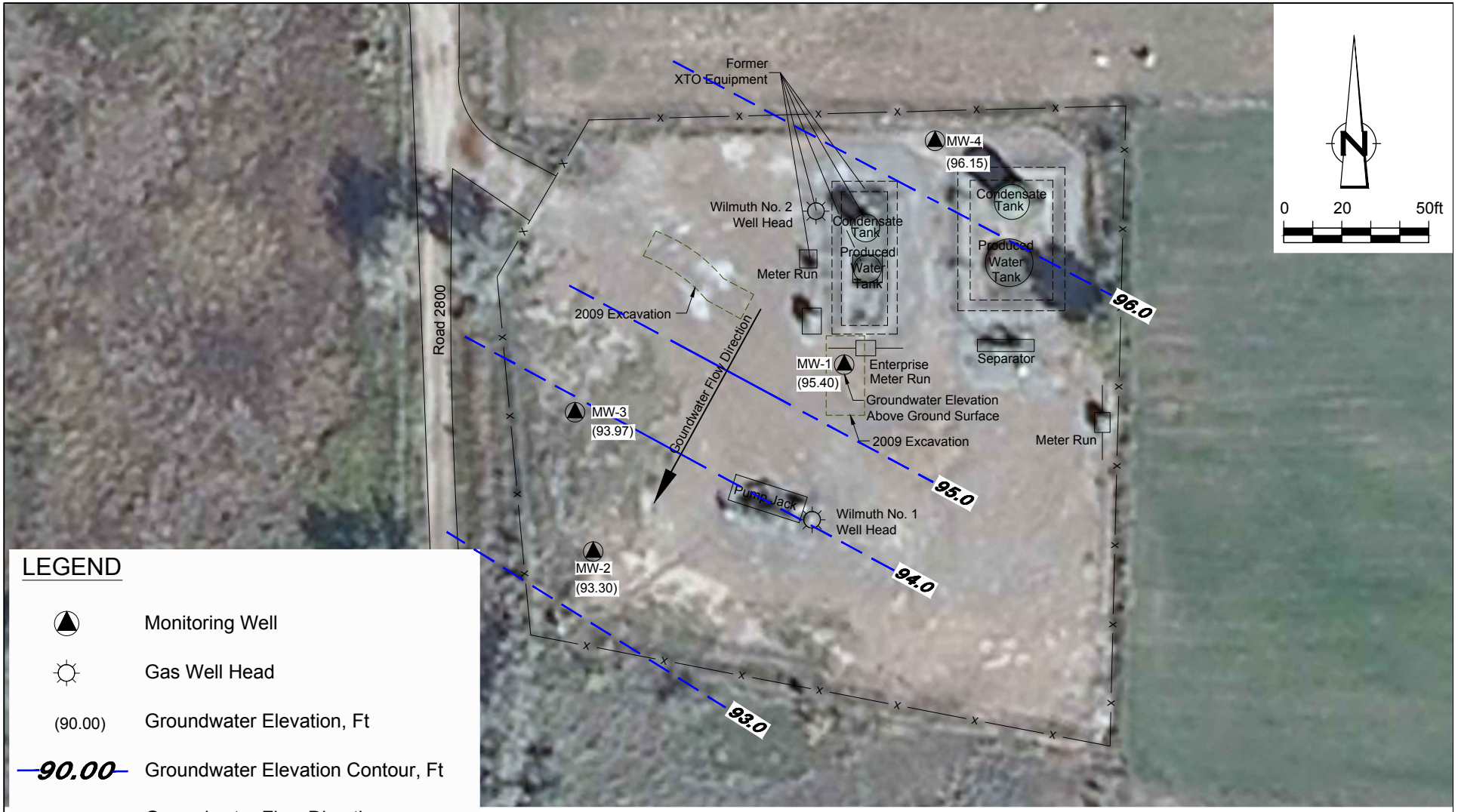


Figure 6

SEPTEMBER 2014 GROUNDWATER POTENTIOMETRIC SURFACE MAP
WILMUTH No. 1 NATURAL GAS WELL PRODUCTION SITE
SECTION 26, T31-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074937-95(005)GN-DL004_GG OCT 21/2014

Tables

TABLE 1

SITE HISTORY TIMELINE
CONOCOPHILLIPS COMPANY
WILMUTH NO. 1
SAN JUAN COUNTY, NEW MEXICO

Date/Time Period	*Event/Action*	*Description/Comments*
July 24, 1958 to August 11, 1958	Production Well Completion	Well spudded and completed by El Paso Natural Gas Company.
November 1, 1986	Change of Operator	Operator changed from El Paso Natural Gas Company to Meridian Oil Inc. (a subsidiary of Burlington Resources, Inc.)
May 17, 2001	Release	Due to a broken dump arm, 22 barrels (bbls) of produced water were released within the bermed area around the produced water tank. 20 bbls were reported to be recovered.
December 17, 2002	Release	A corrosion hole in the bottom of a steel pit tank that collected fluids from the separator and condensate tank drain allowed an unknown volume of produced water and condensate to leak onto the ground. All fluids were contained inside the tank berm. Impacted gravel and soils were excavated and disposed of at JFJ Landfarm. Excavation dimensions were approximately 30 feet by 25 feet by 3 feet for a total of 85 cubic yards.
May 21, 2004	Workover Pit Proposal Approved	A lined workover pit was approved by Denny Faust of the NMOCD as detailed in Burlington Resources general pit construction plan dated April 26, 2004 which was also approved by the NMOCD.
March 31, 2006	Change of Operator	ConocoPhillips Company completed acquisition of Burlington Resources.
December 22 and 23, 2009	Potential for Groundwater Impacts Discovered	ConocoPhillips company notified Brandon Powell and Kelly Roberts of the NMOCD about groundwater seeping into two excavated areas on Site where discolored soils had been found during line tie-in procedures. The type, volume, and origin of the initial release was unknown. Groundwater samples were collected from the two areas and analyzed by Envirotech Inc. of Farmington, NM for benzene, toluene, ethylbenzene and total xylenes (BTEX), total petroleum hydrocarbons (TPH) and chloride. Analytical results indicated that BTEX and TPH are below NMWQCC groundwater standards; however, chloride was present at a concentration above the standard of 250 mg/L with a concentration of 2,500 mg/L in the area of the excavation and a concentration of 950 mg/L in an trench associated with line tie-in procedures. Soil samples were collected from the same trench and groundwater samples were collected from where discolored soil was present. The soil was analyzed by Envirotech for BTEX, TPH and Chloride. Analytical results for all soil samples were below NMOCD recommended soil action levels.

Date/Time Period	*Event/Action*	*Description/Comments*
January 7, 2010	NMOCD Correspondence	A C-141 Release Notification and Corrective Action form was submitted to the NMOCD by ConocoPhillips.
April 5, 2010 through April 7, 2010	Groundwater Monitoring Well Installation and Baseline Soil Sampling	Tetra Tech supervised the installation of 4 groundwater Monitor Wells; MW-1, MW-2, MW-3 and MW-4, by Enviro-Drill Inc. of Albuquerque, NM. Each well was installed with 25 feet of screen. MW-1, MW-2 and MW-3 were all set at 30 feet below ground surface. MW-4 was set at 35 feet below ground surface. A confining layer of gray siltstone was found at depth in each of the four boring locations. Soil samples were collected from all four soil borings and analyzed for major ions, total metals, semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs) including BTEX, diesel range organics, and gasoline range organics. Analytical results for all soil samples were below NMOCD recommended soil action levels.
April 8, 2010	Baseline Groundwater Sampling	Tetra Tech conducted the initial groundwater sampling from Site Monitor Wells, MW-1, MW-2, MW-3 and MW-4. A baseline suite was completed including major ions, NMWQCC dissolved metals, SVOCs , VOCs including BTEX, diesel range organics, and gasoline range organics. All four Site monitor wells were below NMWQCC standards for BTEX constituents. All four wells were above the standard for dissolved manganese. MW-1, MW-2 and MW-4 were above the standard for total dissolved solids (TDS). MW-1 and MW-4 were also above the standard for sulfate.
June 9, 2010	Quarterly Groundwater Monitoring Event	Quarterly groundwater sampling was conducted by Tetra Tech. Samples were collected from all Site monitor wells and analyzed for BTEX, dissolved manganese, chloride, sulfate, and TDS. All four Site monitor wells were below NMWQCC standards for BTEX constituents. Samples collected from all four Site wells were above the standard for dissolved manganese. Samples collected from MW-1, MW-2 and MW-4 were above the standard for TDS.
September 20, 2010	Quarterly Groundwater Monitoring Event	Quarterly groundwater sampling was conducted by Tetra Tech. Samples were collected from all Site monitor wells and analyzed for BTEX, dissolved manganese, chloride, sulfate, and TDS. All four Site monitor wells were below NMWQCC standards for BTEX constituents. Samples collected from all four Site wells were above the standard for dissolved manganese. Samples collected from MW-1, MW-2 and MW-4 were above the standard for TDS.
December 16, 2010	Quarterly Groundwater Monitoring Event	Forth quarterly groundwater sampling was conducted by Tetra Tech. Samples were collected from all Site monitor wells and analyzed for BTEX, dissolved manganese, sulfate, and TDS. All four Site monitor wells were below NMWQCC standards for BTEX constituents. Samples collected from all four Site wells were above the standard for dissolved manganese. Samples collected from MW-1, MW-2 and MW-4 were above the standard for TDS.

Date/Time Period	*Event/Action*	*Description/Comments*
March 16, 2011	Quarterly Groundwater Monitoring Event	Fifth quarterly groundwater sampling was conducted by Tetra Tech. Samples were collected from all Site monitor wells and analyzed for BTEX, dissolved manganese, chloride, sulfate, and TDS. All four Site monitor wells were below NMWQCC standards for chloride, sulfate and BTEX constituents. Samples collected from all four Site wells were above the standard for dissolved manganese. The sample collected from MW-1 was above the standard for TDS.
June 15, 2011	Transfer of Consulting Responsibilities	Site consulting responsibilities were transferred from Tetra Tech of Albuquerque, NM to Conestoga-Rovers & Associates (CRA) of Albuquerque, NM.
June 22, 2011	Quarterly Groundwater Monitoring Event	Sixth quarterly groundwater sampling was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for BTEX, dissolved manganese, chloride, sulfate, and TDS. All four Site monitoring wells were below NMWQCC standards for chloride, sulfate and BTEX constituents. Samples collected from all four Site wells were above the standard for dissolved manganese. The sample collected from MW-1 was above the standard for TDS.
October 12, 2011	Quarterly Groundwater Monitoring Event	Seventh quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for BTEX, dissolved manganese, and TDS. All four Site monitoring wells were below NMWQCC standards for TDS and BTEX constituents. Samples collected from all four Site wells were above the standard for dissolved manganese.
December 14, 2011	Quarterly Groundwater Monitoring Event	Eighth quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for BTEX, dissolved manganese, and TDS. All four Site monitoring wells were below NMWQCC standards for TDS and BTEX constituents. Samples collected from all four Site wells were above the standard for dissolved manganese.
March 7, 2012	Quarterly Groundwater Monitoring Event	Ninth quarterly groundwater sampling event was conducted by CRA. BTEX analysis was discontinued following the December 2011 sampling event. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.

Date/Time Period	*Event/Action*	*Description/Comments*
June 6, 2012	Quarterly Groundwater Monitoring Event	Tenth quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
September 19, 2012	Quarterly Groundwater Monitoring Event	11th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
December 12, 2012	Quarterly Groundwater Monitoring Event	12th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese. TDS below standard for 6th consecutive quarterly event.
March 18, 2013	Quarterly Groundwater Monitoring Event	13th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. MW-1 was above NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
June 14, 2013	Quarterly Groundwater Monitoring Event	14th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
September 12, 2013	Quarterly Groundwater Monitoring Event	15th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
December 12, 2013	Quarterly Groundwater Monitoring Event	16th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
April 3, 2014	Quarterly Groundwater Monitoring Event	17th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for TDS. All four Site monitoring wells were below NMWQCC standards for TDS.

Date/Time Period	*Event/Action*	*Description/Comments*
June 19, 2014	Quarterly Groundwater Monitoring Event	18th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
September 15, 2014	Quarterly Groundwater Monitoring Event	19th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
December 15, 2014	Quarterly Groundwater Monitoring Event	20th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.

Notes:
NMOCD = New Mexico Oil Conservation Division
NMWQCC = New Mexico Water Quality Control Commission

TABLE 2

MONITORING WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS
CONOCOPHILLIPS COMPANY
WILMUTH NO. 1
SAN JUAN COUNTY, NEW MEXICO

Well ID	*Total Depth (feet bgs)*	*Top of Casing Elevation**	*Screen Interval (feet bgs)*	*Date Measured*	*Depth to Groundwater (feet below TOC)*	*Relative Water Level**
MW-1	30	95.8	4.5 - 29.5	4/8/2010	5.21	90.59
				6/9/2010	1.94	93.86
				9/20/2010	1.51	94.29
				12/16/2010	3.31	92.49
				3/16/2011	4.98	90.82
				6/22/2011	2.45	93.35
				10/12/2011	0[(1)]	95.80[(1)]
				12/14/2011	2.62	93.18
				3/7/2012	4.36	91.44
				6/6/2012	1.11	94.69
				9/19/2012	0[(1)]	95.80[(1)]
				12/12/2012	2.56	93.24
				3/18/2013	4.52	91.28
				6/14/2013	0.90	94.90
				9/12/2013	0.21	95.59
				12/12/2013	2.70	93.10
				4/3/2014	4.28	91.52
				6/19/2014	0.88	94.92
				9/15/2014	0.40	95.40
				12/15/2014	3.20	92.60
MW-2	30	95.8	4.5 - 29.5	4/8/2010	6.48	89.32
				6/9/2010	3.68	92.12
				9/20/2010	3.28	92.52
				12/16/2010	4.83	90.97
				3/16/2011	6.31	89.49
				6/22/2011	4.11	91.69
				10/12/2011	1.88	93.92
				12/14/2011	4.25	91.55
				3/7/2012	5.67	90.13
				6/6/2012	3.05	92.75
				9/19/2012	2.05	93.75
				12/12/2012	4.31	91.49
				3/18/2013	5.96	89.84
				6/14/2013	2.96	92.84
				9/12/2013	2.41	93.39
				12/12/2013	4.43	91.37
				4/3/2014	5.84	89.96
				6/19/2014	2.88	92.92
				9/15/2014	2.50	93.30
				12/15/2014	4.99	90.81

Well ID	*Total Depth (feet bgs)*	*Top of Casing Elevation**	*Screen Interval (feet bgs)*	*Date Measured*	*Depth to Groundwater (feet below TOC)*	*Relative Water Level**
MW-3	30	96.32	4.5 - 29.5	4/8/2010	6.37	89.95
				6/9/2010	3.39	92.93
				9/20/2010	3.02	93.30
				12/16/2010	4.65	91.67
				3/16/2011	6.20	90.12
				6/22/2011	3.91	92.41
				10/12/2011	1.55	94.77
				12/14/2011	4.04	92.28
				3/7/2012	5.59	90.73
				6/6/2012	2.75	93.57
				9/19/2012	1.71	94.61
				12/12/2012	4.09	92.23
				3/18/2013	5.89	90.43
				6/14/2013	2.72	93.60
				9/12/2013	2.13	94.19
				12/12/2013	4.27	92.05
				4/3/2014	5.73	90.59
				6/19/2014	2.26	94.06
				9/15/2014	2.35	93.97
				12/15/2014	4.88	91.44
MW-4	35	98.7	9.5 - 34.5	4/8/2010	9.68(2)	89.02
				6/9/2010	4.41	94.29
				9/20/2010	3.78	94.92
				12/16/2010	5.70	93.00
				3/16/2011	7.44	91.26
				6/22/2011	4.81	93.89
				10/12/2011	2.05	96.65
				12/14/2011	5.01	93.69
				3/7/2012	6.83	91.87
				6/6/2012	3.34	95.36
				9/19/2012	2.11	96.59
				12/12/2012	4.93	93.77
				3/18/2013	6.96	91.74
				6/14/2013	3.10	95.60
				9/12/2013	2.42	96.28
				12/12/2013	5.08	93.62
				4/3/2014	6.59	92.11
				6/19/2014	2.85	95.85
				9/15/2014	2.55	96.15
				12/15/2014	5.60	93.10

Notes:
TOC = Top of casing
bgs = Below ground surface
* = Elevation relative to an arbitrary reference elevation of 100 feet
(1) = Water flowing up and out of well casing.
(2) = Anomalous data point

TABLE 3

FIELD PARAMETERS SUMMARY
CONOCOPHILLIPS COMPANY
WILMUTH NO. 1
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	4/3/2014	11.27	6.82	0.842	1295	1.44	75.6	9.50
	4/3/2014	11.27	6.81	0.843	1297	1.30	75.5	9.75
	4/3/2014	11.29	6.80	0.843	1297	1.20	75.3	10.00
	6/19/2014	13.36	6.27	0.786	1209	3.68	-137.4	10.75
	6/19/2014	13.12	6.25	0.787	1211	2.94	-143.1	11.25
	6/19/2014	13.04	6.26	0.787	1210	2.55	-147.8	11.75
	9/15/2014	17.00	7.14	0.80	1300	9.28	113.0	12.00
	9/15/2014	17.10	7.13	0.90	1330	8.46	107.0	13.00
	9/15/2014	17.20	7.14	0.90	1330	8.04	105.0	14.00
	12/15/2014	14.25	7.35	2.026	3118	2.89	75.2	9.50
	12/15/2014	14.36	7.35	2.053	3154	2.13	73.3	10.00
	12/15/2014	14.47	7.36	2.057	3165	1.95	71.9	10.50
MW-2	4/3/2014	12.07	6.82	0.710	1093	0.71	71.8	11.50
	4/3/2014	11.97	6.83	0.710	1092	1.48	71.0	11.75
	4/3/2014	11.96	6.82	0.709	1091	1.25	70.1	12.00
	6/19/2014	13.52	6.29	0.726	1117	5.01	-145.9	12.75
	6/19/2014	13.38	6.27	0.725	1116	3.66	-152.9	13.25
	6/19/2014	13.16	6.25	0.726	1117	2.63	-162.0	13.75
	9/15/2014	16.20	7.08	0.70	1150	7.68	111.0	12.75
	9/15/2014	15.90	7.08	0.70	1140	7.68	110.0	13.25
	9/15/2014	15.80	7.08	0.70	1160	7.61	111.0	13.75
	12/15/2014	13.26	7.14	1.956	3008	2.72	-7.6	11.75
	12/15/2014	13.33	7.26	1.939	2982	2.41	-1.5	12.25
	12/15/2014	13.44	7.29	1.934	2974	2.00	7.8	12.75

MW-3	4/3/2014	11.90	6.74	0.700	1077	1.42	96.8	12.00
	4/3/2014	11.85	6.74	0.700	1078	1.28	96.4	12.25
	4/3/2014	11.83	6.74	0.700	1077	1.24	95.7	12.50
	6/19/2014	12.94	6.14	0.716	1101	3.61	-144.2	13.00
	6/19/2014	12.90	6.19	0.716	1101	2.77	-152.6	13.50
	6/19/2014	12.95	6.22	0.717	1102	2.35	-160.1	14.00
	9/15/2014	15.90	6.98	0.70	1140	7.65	147.0	13.00
	9/15/2014	15.70	6.97	0.70	1140	7.67	147.0	13.50
	9/15/2014	15.30	6.98	0.70	1140	7.66	146.0	14.00
	12/15/2014	13.12	7.32	1.905	2931	2.20	28.2	12.00
	12/15/2014	13.00	7.31	1.901	2925	1.88	28.5	12.50
	12/15/2014	13.23	7.31	1.892	2910	2.14	29.4	13.00
MW-4	4/3/2014	12.19	6.90	0.698	1075	1.16	91.8	11.50
	4/3/2014	12.10	6.85	0.699	1075	1.04	90.4	11.75
	4/3/2014	11.96	6.80	0.700	1077	1.03	88.6	12.00
	6/19/2014	13.94	6.31	0.713	1096	3.23	-136.8	12.75
	6/19/2014	13.86	6.28	0.712	1095	2.89	-151.2	13.25
	6/19/2014	13.68	6.27	0.712	1096	2.20	-157.5	13.75
	9/15/2014	15.20	6.69	0.70	1110	8.97	177.0	11.00
	9/15/2014	15.20	6.86	0.70	1110	8.10	170.0	12.00
	9/15/2014	15.20	6.87	0.70	1130	7.52	167.0	13.00
	12/15/2014	12.99	7.34	1.884	2899	8.56	68.6	11.50
	12/15/2014	12.89	7.32	1.887	2903	3.90	67.9	12.00
	12/15/2014	13.03	7.33	1.886	2902	3.06	67.8	12.50

Notes:

TDS = total dissolved solids

DO = dissolved oxygen

ORP = oxidation-reduction potential

TABLE 4

GROUNDWATER LABORATORY ANALYTICAL RESULTS SUMMARY
CONOCOPHILLIPS COMPANY
WILMUTH NO. 1
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)*	*Chloride (mg/L)*	*Sulfate (mg/L)*	*Manganese (dissolved) (mg/L)*	*Total dissolved solids (TDS) (mg/L)*
MW-1	MW-1	4/8/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	143	**879**	**3.03**	**1780**
	MW-1 Duplicate	4/8/2010	(Duplicate)	< 0.001	0.0011	< 0.001	0.001	--	--	--	--
	MW-1	6/9/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	26.9	375	**1.08**	**1190**
	MW-1 Duplicate	6/9/2010	(Duplicate)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--	--
	MW-1	9/20/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	30.0	425	**0.933**	**1020**
	MW-1 Duplicate	9/20/2010	(Duplicate)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--	--
	MW-1	12/16/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	381	**0.896**	**1010**
	MW-1 Duplicate	12/16/2010	(Duplicate)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--	--
	MW-1	3/16/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	26.0	499	**2.36**	**1200**
	MW-1 Duplicate	3/16/2011	(Duplicate)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--	--
	GW-74937-062211-PG-04	6/22/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	21.6	585	**2.32**	**1100**
	GW-74937-062211-PG-05	6/22/2011	(Duplicate)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--	--
	GW-074937-101211-CM-009	10/12/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.04**	939
	GW-074937-101211-CM-010	10/12/2011	(Duplicate)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--	--
	GW-074937-121411-CB-MW-1	12/14/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**0.972**	913
	GW-074937-121411-CB-DUP	12/14/2011	(Duplicate)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**--**	--
	GW-074937-3712-CB-MW-1	3/7/2012	(orig)	--	--	--	--	--	--	**0.955**	980
	GW-074937-060612-CB-MW-1	6/6/2012	(orig)	--	--	--	--	--	--	**0.886**	851
	GW-074937-091912-JP-MW-1	9/19/2012	(orig)	--	--	--	--	--	--	**0.915**	853
	GW-074937-091912-JP-DUP	9/19/2012	(Duplicate)	--	--	--	--	--	--	**0.939**	--
	GW-074937-121212-CM-MW-1	12/12/2012	(orig)	--	--	--	--	--	--	**0.979**	927
	GW-074937-031813-CM-MW-1	3/18/2013	(orig)	--	--	--	--	--	--	**1.120**	**1070**
	074937-061413-JK-MW1	6/14/2013	(orig)	--	--	--	--	--	--	**0.930**	831
	GW-074937-091213-CM-MW-1	9/12/2013	(orig)	--	--	--	--	--	--	**0.921**	942
	GW-074937-091213-CM-DUP	9/12/2013	(Duplicate)	--	--	--	--	--	--	**--**	870
	GW-074937-121213-CM-MW-1	12/12/2013	(orig)	--	--	--	--	--	--	**1.10**	930
	GW-074937-040314-CM-MW-1	4/3/2014	(orig)	--	--	--	--	--	--	--	979
	GW-074937-040314-CK-MW-1	6/19/2014	(orig)	--	--	--	--	--	--	**0.96**	885
	GW-074937-091514-CB-MW-1	9/15/2014	(orig)	--	--	--	--	--	--	**1.04**	952
	GW-074937-121514-CM-MW-1	12/15/2014	(orig)	--	--	--	--	--	--	**1.03**	817
MW-2	MW-2	4/8/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	27.7	533	**2.48**	**1120**
	MW-2	6/9/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	19.8	337	**1.66**	**1070**
	MW-2	9/20/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	20.4	304	**0.822**	**1130**
	MW-2	12/16/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	281	**1.37**	**1410**
	MW-2	3/16/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	20.1	280	**1.57**	858
	GW-74937-062211-PG-02	6/22/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	18.5	324	**1.51**	718
	GW-074937-101211-CM-007	10/12/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.49**	743
	GW-074937-121411-CB-MW-2	12/14/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.47**	812
	GW-074937-3712-CB-MW-2	3/7/2012	(orig)	--	--	--	--	--	--	**1.62**	857
	GW-074937-060612-CB-MW-2	6/6/2012	(orig)	--	--	--	--	--	--	**1.26**	688
	GW-074937-091912-JP-MW-2	9/19/2012	(orig)	--	--	--	--	--	--	**1.39**	736
	GW-074937-121212-CM-MW-2	12/12/2012	(orig)	--	--	--	--	--	--	**1.11**	709
	GW-074937-031813-CM-MW-2	3/18/2013	(orig)	--	--	--	--	--	--	**1.56**	804
	074937-061413-JK-MW2	6/14/2013	(orig)	--	--	--	--	--	--	**1.38**	699
	GW-074937-091213-CM-MW-2	9/12/2013	(orig)	--	--	--	--	--	--	**1.450**	760
	GW-074937-121213-CM-MW-2	12/12/2013	(orig)	--	--	--	--	--	--	**1.30**	747
	GW-074937-040314-CM-MW-2	4/3/2014	(orig)	--	--	--	--	--	--	--	819
	GW-074937-061914-CK-MW-2	6/19/2014	(orig)	--	--	--	--	--	--	**1.3**	825
	GW-074937-091514-CB-MW-2	9/15/2014	(orig)	--	--	--	--	--	--	**1.53**	817
	GW-074937-121514-CM-MW-2	12/15/2014	(orig)	--	--	--	--	--	--	**1.31**	778

TABLE 4

GROUNDWATER LABORATORY ANALYTICAL RESULTS SUMMARY
CONOCOPHILLIPS COMPANY
WILMUTH NO. 1
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)	Chloride (mg/L)	Sulfate (mg/L)	Manganese (dissolved) (mg/L)	Total dissolved solids (TDS) (mg/L)
MW-3	MW-3	4/8/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	19.2	259	**1.38**	930
	MW-3	6/9/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	18.5	241	**1.43**	769
	MW-3	9/20/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	20.3	271	**0.736**	830
	MW-3	12/16/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	265	**1.33**	**1200**
	MW-3	3/16/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	18.1	263	**1.57**	896
	GW-74937-062211-PG-01	6/22/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	19.2	324	**1.71**	726
	GW-074937-101211-CM-008	10/12/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.67**	716
	GW-074937-121411-CB-MW-3	12/14/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.56**	713
	GW-074937-3712-CB-MW-3	3/7/2012	(orig)	--	--	--	--	--	--	**1.69**	739
	GW-074937-060612-CB-MW-3	6/6/2012	(orig)	--	--	--	--	--	--	**1.74**	709
	GW-074937-091912-JP-MW-3	9/19/2012	(orig)	--	--	--	--	--	--	**1.60**	723
	GW-074937-121212-CM-MW-3	12/12/2012	(orig)	--	--	--	--	--	--	**1.57**	709
	GW-074937-121212-CM-DUP	12/12/2012	(Duplicate)	--	--	--	--	--	--	**--**	717
	GW-074937-031813-CM-MW-3	3/18/2013	(orig)	--	--	--	--	--	--	**1.58**	770
	GW-074937-031813-CM-DUP	3/18/2013	(Duplicate)	--	--	--	--	--	--	--	766
	074937-061413-JK-MW3	6/14/2013	(orig)	--	--	--	--	--	--	**1.64**	711
	GW-074937-091213-CM-MW-3	9/12/2013	(orig)	--	--	--	--	--	--	**1.650**	764
	GW-074937-121213-CM-MW-3	12/12/2013	(orig)	--	--	--	--	--	--	**1.50**	756
	GW-074937-040314-CM-MW-3	4/3/2014	(orig)	--	--	--	--	--	--	--	764
	GW-074937-040314-CM-DUP	4/3/2014	(Duplicate)	--	--	--	--	--	--	--	783
	GW-074937-061914-CK-MW-3	6/19/2014	(orig)	--	--	--	--	--	--	**1.5**	820
	GW-074937-091514-CB-MW-3	9/15/2014	(orig)	--	--	--	--	--	--	**1.79**	795
	GW-074937-121514-CM-MW-3	12/15/2014	(orig)	--	--	--	--	--	--	**1.82**	782
	GW-074937-121514-CM-DUP	12/15/2014	(Duplicate)	--	--	--	--	--	--	--	786
MW-4	MW-4	4/8/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	40	**918**	**3.94**	**1900**
	MW-4	6/9/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	29.6	542	**3.44**	**1380**
	MW-4	9/20/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	22.4	445	**2.59**	**1160**
	MW-4	12/16/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	464	**2.85**	**1350**
	MW-4	3/16/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	20.6	385	**2.18**	970
	GW-74937-062211-PG-03	6/22/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	22.1	408	**2.31**	814
	GW-074937-101211-CM-006	10/12/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**2.13**	779
	GW-074937-121411-CB-MW-4	12/14/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.94**	776
	GW-074937-3712-CB-MW-4	3/7/2012	(orig)	--	--	--	--	--	--	**1.70**	772
	GW-074937-060612-CB-MW-4	6/6/2012	(orig)	--	--	--	--	--	--	**1.46**	662
	GW-074937-091912-JP-MW-4	9/19/2012	(orig)	--	--	--	--	--	--	**1.90**	771
	GW-074937-121212-CM-MW-4	12/12/2012	(orig)	--	--	--	--	--	--	**1.42**	731
	GW-074937-031813-CM-MW-4	3/18/2013	(orig)	--	--	--	--	--	--	**1.54**	766
	074937-061413-JK-MW4	6/14/2013	(orig)	--	--	--	--	--	--	**1.74**	676
	GW-074937-091213-CM-MW-4	9/12/2013	(orig)	--	--	--	--	--	--	**1.810**	822
	GW-074937-121213-CM-MW-4	12/12/2013	(orig)	--	--	--	--	--	--	**1.20**	776
	GW-074937-121213-CM-DUP	12/12/2013	(Duplicate)	--	--	--	--	--	--	**1.20**	795
	GW-074937-040314-CM-MW-4	4/3/2014	(orig)	--	--	--	--	--	--	--	788
	GW-074937-061914-CK-MW-4	6/19/2014	(orig)	--	--	--	--	--	--	**1.6**	805
	GW-074937-091514-CB-MW-4	9/15/2014	(orig)	--	--	--	--	--	--	**1.82**	813
	GW-074937-121514-CM-MW-4	12/15/2014	(orig)	--	--	--	--	--	--	**1.82**	783
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**250**	**600**	**0.2**	**1000**

Notes:
MW = monitoring well
NMWQCC = New Mexico Water Quality Control Commission
Constituents in **BOLD** are in excess of NMWQCC groundwater quality standards
mg/L = milligrams per liter (parts per million)
< 1.0 = Below laboratory detection limit of 1.0 mg/L
-- = not analyzed

Appendix A

Groundwater Laboratory Analytical Reports

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

April 11, 2014

Jeff Walker
COP Conestoga-Rovers & Associa
6121 Indian School Rd. NE
Ste 200
Albuquerque, NM 87110

RE: Project: 074937 WILMUTH NO 1
Pace Project No.: 60166382

Dear Jeff Walker:
Enclosed are the analytical results for sample(s) received by the laboratory on April 04, 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.

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
Christine Matthews, CRA

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

CERTIFICATIONS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60166382

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 #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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

SAMPLE SUMMARY

Project: 074937 WILMUTH NO 1
Pace Project No.: 60166382

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60166382001	**GW-074937-040314-CM-MW-1**	Water	04/03/14 10:45	04/04/14 08:35
60166382002	**GW-074937-040314-CM-MW-2**	Water	04/03/14 10:55	04/04/14 08:35
60166382003	**GW-074937-040314-CM-MW-3**	Water	04/03/14 10:00	04/04/14 08:35
60166382004	**GW-074937-040314-CM-MW-4**	Water	04/03/14 10:25	04/04/14 08:35
60166382005	**GW-074937-040314-CM-DUP**	Water	04/03/14 08:00	04/04/14 08:35

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

SAMPLE ANALYTE COUNT

Project: 074937 WILMUTH NO 1
Pace Project No.: 60166382

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60166382001	**GW-074937-040314-CM-MW-1**	SM 2540C	RAH	1
60166382002	**GW-074937-040314-CM-MW-2**	SM 2540C	RAH	1
60166382003	**GW-074937-040314-CM-MW-3**	SM 2540C	RAH	1
60166382004	**GW-074937-040314-CM-MW-4**	SM 2540C	RAH	1
60166382005	**GW-074937-040314-CM-DUP**	SM 2540C	RAH	1

REPORT OF LABORATORY ANALYSIS

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

PROJECT NARRATIVE

Project: 074937 WILMUTH NO 1
Pace Project No.: 60166382

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: April 11, 2014

General Information:
5 samples were analyzed for SM 2540C. 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:

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

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ANALYTICAL RESULTS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60166382

Sample: GW-074937-040314-CM-MW-1 **Lab ID: 60166382001** Collected: 04/03/14 10:45 Received: 04/04/14 08:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**979**	mg/L	5.0	1		04/08/14 12:34		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60166382

Sample: GW-074937-040314-CM-MW-2 **Lab ID: 60166382002** Collected: 04/03/14 10:55 Received: 04/04/14 08:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**819**	mg/L	5.0	1		04/08/14 12:35		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60166382

Sample: GW-074937-040314-CM-MW-3 **Lab ID: 60166382003** Collected: 04/03/14 10:00 Received: 04/04/14 08:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**764**	mg/L	5.0	1		04/08/14 12:35		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60166382

Sample: GW-074937-040314-CM-MW-4 **Lab ID: 60166382004** Collected: 04/03/14 10:25 Received: 04/04/14 08:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**788**	mg/L	5.0	1		04/08/14 12:35		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60166382

Sample: GW-074937-040314-CM-DUP **Lab ID: 60166382005** Collected: 04/03/14 08:00 Received: 04/04/14 08:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**783**	mg/L	5.0	1		04/08/14 12:35		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074937 WILMUTH NO 1
Pace Project No.: 60166382

QC Batch: WET/47185 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60166382001, 60166382002, 60166382003, 60166382004, 60166382005

METHOD BLANK: 1356722 Matrix: Water
Associated Lab Samples: 60166382001, 60166382002, 60166382003, 60166382004, 60166382005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	04/08/14 12:33	

LABORATORY CONTROL SAMPLE: 1356723

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	987	99	80-120	

SAMPLE DUPLICATE: 1356724

Parameter	Units	60166097002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	389	380	2	10	

SAMPLE DUPLICATE: 1356725

Parameter	Units	60166382004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	788	791	0	10	

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QUALIFIERS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60166382

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074937 WILMUTH NO 1
Pace Project No.: 60166382

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60166382001	**GW-074937-040314-CM-MW-1**	SM 2540C	WET/47185		
60166382002	**GW-074937-040314-CM-MW-2**	SM 2540C	WET/47185		
60166382003	**GW-074937-040314-CM-MW-3**	SM 2540C	WET/47185		
60166382004	**GW-074937-040314-CM-MW-4**	SM 2540C	WET/47185		
60166382005	**GW-074937-040314-CM-DUP**	SM 2540C	WET/47185		

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Sample Condition Upon Receipt

WO#: 60166382

60166382

Client Name: CoP CRA NM

Optional
Proj Due Date:
Proj Name:

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

Tracking #: 5689 1281 9647 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

Cooler Temperature: 1.0 (circle one)

Temperature should be above freezing to 6°C

Date and initials of person examining contents: JD 4/4/14 4/4/14 1126

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.
Sample labels match COC: Includes date/time/ID/analyses Matrix: water	☑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: MA / Lot # of added preservative:
Trip Blank present: Pace Trip Blank lot # (if purchased): n/a	☐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: _____

Project Manager Review: AAF Date: 4/4/14

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	COP CRA NM	Report To:	Christine Mathews	Attention:	ePayables
Address:	6121 Indian School Rd NE, Ste 200	Copy To:	Jeff Walker, Angela Bown	Company Name:	
	Albequerque, NM 87110			Address:	
Email To:	cmathews@craworld.com	Purchase Order No.:	4517664593	Pace Quote Reference:	
Phone:	(505)884-0672 Fax: (505)884-4932	Project Name:	Wilmuth No 1	Pace Project Manager:	Alice Flanagan
Requested Due Date/TAT:	standard	Project Number:	074937	Pace Profile #:	5514, 21

Page: of

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	EPA 6010 Dissolved Mn	SM 2540C TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	GW-074937-040314-CM-MW-1	WT	G			4.3.14	1045		1	1										X		60166382 (1 CBP3U) a1
2	GW-074937-040314-CM-MW-2	WT	G			4.3.14	1055		1	1										X		a2
3	GW-074937-040314-CM-MW-3	WT	G			4.3.14	1000		1	1										X		a3
4	GW-074937-040314-CM-MW-4	WT	G			4.3.14	1035		1	1										X		a4
5	GW-074937-040314-CM-DUP	WT	G			4.3.14	—		1	1										X		a5
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
No metals samples collected this quarter	[signature] / CRA	4.3.14	1230	[signature] / Pace	4/4/14	835	1.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE				
PRINT Name of SAMPLER:	Christine Mathews	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
SIGNATURE of SAMPLER:	[signature] DATE Signed (MM/DD/YY): 4/3/14				

*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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July 07, 2014

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

RE: Project: 074937 WILMUTH NO 1
Pace Project No.: 60172064

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on June 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.

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
Jeff Walker, COP Conestoga-Rovers & Associa

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60172064

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 #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: 074937 WILMUTH NO 1
Pace Project No.: 60172064

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60172064001	**GW-074937-061914-CK-MW-1**	Water	06/19/14 10:50	06/20/14 08:35
60172064002	**GW-074937-061914-CK-MW-2**	Water	06/19/14 10:10	06/20/14 08:35
60172064003	**GW-074937-061914-CK-MW-3**	Water	06/19/14 10:00	06/20/14 08:35
60172064004	**GW-074937-061914-CK-MW-4**	Water	06/19/14 10:40	06/20/14 08:35

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 074937 WILMUTH NO 1
Pace Project No.: 60172064

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60172064001	**GW-074937-061914-CK-MW-1**	EPA 6010	JGP	1
		SM 2540C	ESM	1
60172064002	**GW-074937-061914-CK-MW-2**	EPA 6010	JGP	1
		SM 2540C	ESM	1
60172064003	**GW-074937-061914-CK-MW-3**	EPA 6010	JGP	1
		SM 2540C	ESM	1
60172064004	**GW-074937-061914-CK-MW-4**	EPA 6010	JGP	1
		SM 2540C	ESM	1

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PROJECT NARRATIVE

Project: 074937 WILMUTH NO 1
Pace Project No.: 60172064

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved (LF)
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: July 07, 2014

General Information:
4 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: 074937 WILMUTH NO 1
Pace Project No.: 60172064

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: July 07, 2014

General Information:
4 samples were analyzed for SM 2540C. 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:

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

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ANALYTICAL RESULTS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60172064

Sample: GW-074937-061914-CK-MW-1 **Lab ID: 60172064001** Collected: 06/19/14 10:50 Received: 06/20/14 08:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved (LF)	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**0.96**	mg/L	0.0050	1	06/30/14 10:50	07/02/14 10:25	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**885**	mg/L	5.0	1		06/26/14 10:16		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60172064

Sample: GW-074937-061914-CK-MW-2 **Lab ID: 60172064002** Collected: 06/19/14 10:10 Received: 06/20/14 08:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved (LF)	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1.3**	mg/L	0.0050	1	06/30/14 10:50	07/02/14 10:38	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**825**	mg/L	5.0	1		06/26/14 10:16		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60172064

Sample: GW-074937-061914-CK-MW-3 **Lab ID: 60172064003** Collected: 06/19/14 10:00 Received: 06/20/14 08:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved (LF)	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1.5**	mg/L	0.0050	1	06/30/14 10:50	07/02/14 10:42	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**820**	mg/L	5.0	1		06/26/14 10:16		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60172064

Sample: GW-074937-061914-CK-MW-4 **Lab ID: 60172064004** Collected: 06/19/14 10:40 Received: 06/20/14 08:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved (LF)	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1.6**	mg/L	0.0050	1	06/30/14 10:50	07/02/14 10:46	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**805**	mg/L	5.0	1		06/26/14 10:16		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074937 WILMUTH NO 1
Pace Project No.: 60172064

QC Batch: MPRP/27850 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60172064001, 60172064002, 60172064003, 60172064004

METHOD BLANK: 1403267 Matrix: Water
Associated Lab Samples: 60172064001, 60172064002, 60172064003, 60172064004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Manganese, Dissolved	mg/L	ND	0.0050	07/02/14 10:18	

LABORATORY CONTROL SAMPLE: 1403268

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Manganese, Dissolved	mg/L	1	0.99	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1403269 1403270

Parameter	Units	60172064001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Manganese, Dissolved	mg/L	0.96	1	1	1.9	1.9	92	91	75-125	1	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: 074937 WILMUTH NO 1
Pace Project No.: 60172064

QC Batch: WET/48704 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60172064001, 60172064002, 60172064003, 60172064004

METHOD BLANK: 1401328 Matrix: Water
Associated Lab Samples: 60172064001, 60172064002, 60172064003, 60172064004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	06/26/14 10:10	

LABORATORY CONTROL SAMPLE: 1401329

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	979	98	80-120	

SAMPLE DUPLICATE: 1401330

Parameter	Units	60171920001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1450	1440	0	10	

SAMPLE DUPLICATE: 1401331

Parameter	Units	60171950002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	472	473	0	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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Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60172064

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.

LOD - Limit of Detection.

LOQ - Limit of Quantitation.

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

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074937 WILMUTH NO 1
Pace Project No.: 60172064

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60172064001	**GW-074937-061914-CK-MW-1**	EPA 3010	MPRP/27850	EPA 6010	ICP/21057
60172064002	**GW-074937-061914-CK-MW-2**	EPA 3010	MPRP/27850	EPA 6010	ICP/21057
60172064003	**GW-074937-061914-CK-MW-3**	EPA 3010	MPRP/27850	EPA 6010	ICP/21057
60172064004	**GW-074937-061914-CK-MW-4**	EPA 3010	MPRP/27850	EPA 6010	ICP/21057
60172064001	**GW-074937-061914-CK-MW-1**	SM 2540C	WET/48704		
60172064002	**GW-074937-061914-CK-MW-2**	SM 2540C	WET/48704		
60172064003	**GW-074937-061914-CK-MW-3**	SM 2540C	WET/48704		
60172064004	**GW-074937-061914-CK-MW-4**	SM 2540C	WET/48704		

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Sample Condition Upon Receipt
ESI Tech Spec Client

WO#: 60172064

60172064

Client Name: CoP CRA NM

Optional
Proj Due Date:
Proj Name:

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

Tracking #: 5689 1285 1402 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: 0.6

Temperature should be above freezing to 6°C

Date and initials of person examining contents: JD 6/20/14 1440

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 MK / Lot # of added preservative
Trip Blank present:	☐Yes ☐No ☑N/A	
Pace Trip Blank lot # (if purchased): MK		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: 1235	Start:
End: 1240	End:
Temp:	Temp:

Project Manager Review: AAF Date: 6/23/14

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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: of

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	COP CRA NM	Report To:	Christine Mathews	Attention:	ePayables
Address:	6121 Indian School Rd NE, Ste 200	Copy To:	Jeff Walker, Angela Bown	Company Name:	
	Albequerque, NM 87110			Address:	
Email To:	cmathews@craworld.com	Purchase Order No.:	4517664593	Pace Quote Reference:	
Phone:	(505)884-0672 Fax: (505)884-4932	Project Name:	Wilmuth No 1	Pace Project Manager:	Alice Flanagan
Requested Due Date/TAT:	standard	Project Number:	074937	Pace Profile #:	5514, 21

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	EPA 6010 Dissolved Mn	SM 2540C TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	GW-074937-06914-CK-MW-1	WT	G	—	—	6/19/14	1050		2	X									X	X		60177064
2	GW-074937-06914-CK-MW-2	WT	G	—	—	6/19/14	1010		2	X									X	X		
3	GW-074937-06914-CK-MW-3	WT	G	—	—	6/19/14	1000		2	X									X	X		
4	GW-074937-06914-CK-MW-4	WT	G	—	—	6/19/14	1040		2	X									X	X		
5	~~GW-074937-06914-CK-dup~~	~~WT~~	~~G~~	—	—	~~6/19/14~~			~~2~~	X												
6																						
7																						
8																						
9																						
10																						
11																						
12																						

2 (BTEX)

Requested Analysis Filtered (Y/N)

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)
Please Note Metals have Not been field filtered	Jesse Brown	6/19/14	1200		6/20/14	835	0.6	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jesse Brown

SIGNATURE of SAMPLER: Jesse Brown DATE Signed (MM/DD/YY): 6/19/14

*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.

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

Pace Analytical Services, Inc.
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October 02, 2014

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

RE: Project: 074937 Wilmuth No 1
Pace Project No.: 60178265

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on September 18, 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.

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: 074937 Wilmuth No 1
Pace Project No.: 60178265

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

Pace Analytical Services, Inc.
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SAMPLE SUMMARY

Project: 074937 Wilmuth No 1
Pace Project No.: 60178265

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60178265001	**GW-074937-091514-CB-MW-1**	Water	09/15/14 13:30	09/18/14 08:25
60178265002	**GW-074937-091514-CB-MW-2**	Water	09/15/14 13:40	09/18/14 08:25
60178265003	**GW-074937-091514-CB-MW-3**	Water	09/15/14 13:00	09/18/14 08:25
60178265004	**GW-074937-091514-CB-MW-4**	Water	09/15/14 12:55	09/18/14 08:25

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SAMPLE ANALYTE COUNT

Project: 074937 Wilmuth No 1
Pace Project No.: 60178265

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60178265001	**GW-074937-091514-CB-MW-1**	EPA 6010	NDJ	1
		SM 2540C	MER	1
60178265002	**GW-074937-091514-CB-MW-2**	EPA 6010	NDJ	1
		SM 2540C	MER	1
60178265003	**GW-074937-091514-CB-MW-3**	EPA 6010	NDJ	1
		SM 2540C	MER	1
60178265004	**GW-074937-091514-CB-MW-4**	EPA 6010	NDJ	1
		SM 2540C	MER	1

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PROJECT NARRATIVE

Project: 074937 Wilmuth No 1
Pace Project No.: 60178265

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: CRA Conoco New Mexico
Date: October 02, 2014

General Information:
4 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: 074937 Wilmuth No 1
Pace Project No.: 60178265

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: CRA Conoco New Mexico
Date: October 02, 2014

General Information:
4 samples were analyzed for SM 2540C. 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:

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

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ANALYTICAL RESULTS

Project: 074937 Wilmuth No 1
Pace Project No.: 60178265

Sample: GW-074937-091514-CB-MW-1 **Lab ID: 60178265001** Collected: 09/15/14 13:30 Received: 09/18/14 08:25 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							
Manganese, Dissolved	**1040**	ug/L	5.0	1	09/20/14 11:50	10/01/14 15:23	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**952**	mg/L	5.0	1		09/22/14 14:14		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074937 Wilmuth No 1
Pace Project No.: 60178265

Sample: GW-074937-091514-CB-MW-2 **Lab ID: 60178265002** Collected: 09/15/14 13:40 Received: 09/18/14 08:25 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							
Manganese, Dissolved	**1530**	ug/L	5.0	1	09/20/14 11:50	10/01/14 15:27	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**817**	mg/L	5.0	1		09/22/14 14:15		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074937 Wilmuth No 1
Pace Project No.: 60178265

Sample: GW-074937-091514-CB-MW-3 **Lab ID: 60178265003** Collected: 09/15/14 13:00 Received: 09/18/14 08:25 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							
Manganese, Dissolved	**1790**	ug/L	5.0	1	09/20/14 11:50	10/01/14 15:30	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**795**	mg/L	5.0	1		09/22/14 14:15		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074937 Wilmuth No 1
Pace Project No.: 60178265

Sample: GW-074937-091514-CB-MW-4 **Lab ID: 60178265004** Collected: 09/15/14 12:55 Received: 09/18/14 08:25 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							
Manganese, Dissolved	**1820**	ug/L	5.0	1	09/20/14 11:50	10/01/14 15:34	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**813**	mg/L	5.0	1		09/22/14 14:15		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074937 Wilmuth No 1
Pace Project No.: 60178265

QC Batch: MPRP/28997 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60178265001, 60178265002, 60178265003, 60178265004

METHOD BLANK: 1446135 Matrix: Water
Associated Lab Samples: 60178265001, 60178265002, 60178265003, 60178265004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Manganese, Dissolved	ug/L	ND	5.0	10/01/14 14:15	

LABORATORY CONTROL SAMPLE: 1446136

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Manganese, Dissolved	ug/L	1000	1020	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1446137 1446138

Parameter	Units	60178343001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Manganese, Dissolved	ug/L	196	1000	1000	1430	1370	123	117	75-125	4	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: 074937 Wilmuth No 1
Pace Project No.: 60178265

QC Batch: WET/50380 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60178265001, 60178265002, 60178265003, 60178265004

METHOD BLANK: 1445608 Matrix: Water
Associated Lab Samples: 60178265001, 60178265002, 60178265003, 60178265004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	09/22/14 14:12	

LABORATORY CONTROL SAMPLE: 1445609

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 1445610

Parameter	Units	60178265001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	952	932	2	10	

SAMPLE DUPLICATE: 1445611

Parameter	Units	60178268005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2030	2030	0	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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QUALIFIERS

Project: 074937 Wilmuth No 1
Pace Project No.: 60178265

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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074937 Wilmuth No 1
Pace Project No.: 60178265

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60178265001	**GW-074937-091514-CB-MW-1**	EPA 3010	MPRP/28997	EPA 6010	ICP/21843
60178265002	**GW-074937-091514-CB-MW-2**	EPA 3010	MPRP/28997	EPA 6010	ICP/21843
60178265003	**GW-074937-091514-CB-MW-3**	EPA 3010	MPRP/28997	EPA 6010	ICP/21843
60178265004	**GW-074937-091514-CB-MW-4**	EPA 3010	MPRP/28997	EPA 6010	ICP/21843
60178265001	**GW-074937-091514-CB-MW-1**	SM 2540C	WET/50380		
60178265002	**GW-074937-091514-CB-MW-2**	SM 2540C	WET/50380		
60178265003	**GW-074937-091514-CB-MW-3**	SM 2540C	WET/50380		
60178265004	**GW-074937-091514-CB-MW-4**	SM 2540C	WET/50380		

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Sample Condition Upon Receipt

WO# : 60178265

60178265

Client Name: COP CRA

Optional
Proj Due Date:
Proj Name:

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

Tracking #: 6113 5279 8902 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 ☒ 2PK

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

Date and initials of person examining contents: JB 9/18

Temperature should be above freezing to 6°C

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: AMK Date: 9/18/14

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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: of

Section A — **Required** Client Information:

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

Section B — **Required** Project Information:

Report To:	Christine Mathews
Copy To:	Jeff Walker, Angela Bown
Purchase Order No.:	4517664593
Project Name:	Wilmuth No 1
Project Number:	074937

Section C — Invoice Information:

Attention:	ePayables
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Alice Flanagan
Pace Profile #:	5514, 21

REGULATORY AGENCY

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

Site Location STATE: NM

Section D — **Required** Client Information

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

Valid Matrix Codes

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	EPA 6010 Dissolved Mn	SM 2540C TDS								Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	GW-074937-091514-CB-MW-1	WT	G	—	—	9/15/14	1330		2	1		1						X	X	BP3N	BP3N							001
2	GW-074937-091514-CB-MW-2	WT	G	—	—	9/15/14	1340		2	1		1						X	X									002
3	GW-074937-091514-CB-MW-3	WT	G	—	—	9/15/14	1300		2	1		1						X	X									003
4	GW-074937-091514-CB-MW-4	WT	G	—	—	9/15/14	1255		2	1		1						X	X									004
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

60178265

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 have been field filtered.	Cassie Brown/CRA	9/17/14	1550	J B Pace	9/19	0825	1.2	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Cassie Brown

SIGNATURE of SAMPLER: Cassie Brown DATE Signed (MM/DD/YY): 9/17/14

Page 16 of 16

*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.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

January 05, 2015

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

RE: Project: 074937 Wilmuth No 1
Pace Project No.: 60184896

Dear Christine Mathews:
Enclosed are the analytical results for sample(s) received by the laboratory on December 18, 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.

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

REPORT OF LABORATORY ANALYSIS

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

CERTIFICATIONS

Project: 074937 Wilmuth No 1
Pace Project No.: 60184896

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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Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: 074937 Wilmuth No 1
Pace Project No.: 60184896

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60184896001	**GW-074937-121514-CM-MW-1**	Water	12/15/14 15:25	12/18/14 09:00
60184896002	**GW-074937-121514-CM-MW-2**	Water	12/15/14 14:50	12/18/14 09:00
60184896003	**GW-074937-121514-CM-MW-3**	Water	12/15/14 14:55	12/18/14 09:00
60184896004	**GW-074937-121514-CM-MW-4**	Water	12/15/14 15:20	12/18/14 09:00
60184896005	**GW-074937-121514-CM-DUP**	Water	12/15/14 00:00	12/18/14 09:00

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SAMPLE ANALYTE COUNT

Project: 074937 Wilmuth No 1
Pace Project No.: 60184896

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60184896001	**GW-074937-121514-CM-MW-1**	EPA 6010	SMW	1
		SM 2540C	JML	1
60184896002	**GW-074937-121514-CM-MW-2**	EPA 6010	SMW	1
		SM 2540C	JML	1
60184896003	**GW-074937-121514-CM-MW-3**	EPA 6010	SMW	1
		SM 2540C	JML	1
60184896004	**GW-074937-121514-CM-MW-4**	EPA 6010	SMW	1
		SM 2540C	JML	1
60184896005	**GW-074937-121514-CM-DUP**	SM 2540C	JML	1

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PROJECT NARRATIVE

Project: 074937 Wilmuth No 1
Pace Project No.: 60184896

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: CRA Conoco New Mexico
Date: January 05, 2015

General Information:
4 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: 074937 Wilmuth No 1
Pace Project No.: 60184896

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: CRA Conoco New Mexico
Date: January 05, 2015

General Information:
5 samples were analyzed for SM 2540C. 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:

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

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ANALYTICAL RESULTS

Project: 074937 Wilmuth No 1
Pace Project No.: 60184896

Sample: GW-074937-121514-CM-MW-1 **Lab ID: 60184896001** Collected: 12/15/14 15:25 Received: 12/18/14 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							
Manganese, Dissolved	**1030**	ug/L	5.0	1	12/23/09 05:00	12/26/14 11:04	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**817**	mg/L	5.0	1		12/22/14 12:56		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Project: 074937 Wilmuth No 1
Pace Project No.: 60184896

Sample: GW-074937-121514-CM-MW-2 **Lab ID: 60184896002** Collected: 12/15/14 14:50 Received: 12/18/14 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							
Manganese, Dissolved	**1310**	ug/L	5.0	1	12/23/09 05:00	12/26/14 11:07	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**778**	mg/L	5.0	1		12/22/14 12:57		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074937 Wilmuth No 1
Pace Project No.: 60184896

Sample: GW-074937-121514-CM-MW-3 **Lab ID: 60184896003** Collected: 12/15/14 14:55 Received: 12/18/14 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							
Manganese, Dissolved	**1820**	ug/L	5.0	1	12/23/09 05:00	12/26/14 11:09	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**782**	mg/L	5.0	1		12/22/14 12:57		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074937 Wilmuth No 1
Pace Project No.: 60184896

Sample: GW-074937-121514-CM-MW-4 **Lab ID: 60184896004** Collected: 12/15/14 15:20 Received: 12/18/14 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							
Manganese, Dissolved	**1820**	ug/L	5.0	1	12/23/09 05:00	12/26/14 11:11	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**783**	mg/L	5.0	1		12/22/14 12:57		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 074937 Wilmuth No 1
Pace Project No.: 60184896

Sample: GW-074937-121514-CM-DUP **Lab ID: 60184896005** Collected: 12/15/14 00:00 Received: 12/18/14 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**786**	mg/L	5.0	1		12/22/14 12:57		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: 074937 Wilmuth No 1
Pace Project No.: 60184896

QC Batch: MPRP/30285 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60184896001, 60184896002, 60184896003, 60184896004

METHOD BLANK: 1499114 Matrix: Water
Associated Lab Samples: 60184896001, 60184896002, 60184896003, 60184896004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Manganese, Dissolved	ug/L	ND	5.0	12/26/14 10:29	

LABORATORY CONTROL SAMPLE: 1499115

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Manganese, Dissolved	ug/L	1000	1030	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1499116 1499117

Parameter	Units	60184723003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Manganese, Dissolved	ug/L	1490	1000	1000	2480	2460	98	97	75-125	1	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: 074937 Wilmuth No 1
Pace Project No.: 60184896

QC Batch: WET/52178 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60184896001, 60184896002, 60184896003, 60184896004, 60184896005

METHOD BLANK: 1498818 Matrix: Water
Associated Lab Samples: 60184896001, 60184896002, 60184896003, 60184896004, 60184896005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	12/22/14 12:55	

LABORATORY CONTROL SAMPLE: 1498819

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	991	99	80-120	

SAMPLE DUPLICATE: 1498820

Parameter	Units	60184687001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	172	163	5	10	

SAMPLE DUPLICATE: 1498821

Parameter	Units	60184896001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	817	811	1	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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QUALIFIERS

Project: 074937 Wilmuth No 1
Pace Project No.: 60184896

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.

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(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074937 Wilmuth No 1
Pace Project No.: 60184896

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60184896001	**GW-074937-121514-CM-MW-1**	EPA 3010	MPRP/30285	EPA 6010	ICP/22641
60184896002	**GW-074937-121514-CM-MW-2**	EPA 3010	MPRP/30285	EPA 6010	ICP/22641
60184896003	**GW-074937-121514-CM-MW-3**	EPA 3010	MPRP/30285	EPA 6010	ICP/22641
60184896004	**GW-074937-121514-CM-MW-4**	EPA 3010	MPRP/30285	EPA 6010	ICP/22641
60184896001	**GW-074937-121514-CM-MW-1**	SM 2540C	WET/52178		
60184896002	**GW-074937-121514-CM-MW-2**	SM 2540C	WET/52178		
60184896003	**GW-074937-121514-CM-MW-3**	SM 2540C	WET/52178		
60184896004	**GW-074937-121514-CM-MW-4**	SM 2540C	WET/52178		
60184896005	**GW-074937-121514-CM-DUP**	SM 2540C	WET/52178		

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Sample Condition Upon Receipt
ESI Tech Spec Client

WO# : 60184896

60184896

Client Name: CoP CBA NM

Optional
Proj Due Date:
Proj Name:

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

Tracking #: 6262 7064 4699 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: 3.7

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 12/10/14 1200

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: MA / Lot # of added preservative:
Trip Blank present:	☐Yes ☐No ☑N/A	
Pace Trip Blank lot # (if purchased): MA		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: AMF Date: 12/18/14

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

Start: 1155	Start:
End: 1200	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.:	4071725
Project Name:	Wilmuth No 1
Project Number:	074937

Section C — Invoice Information:

Attention:	CRA
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Alice Flanagan
Pace Profile #:	7801, 21

REGULATORY AGENCY

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

Site Location STATE: NM

Section D — **Required** Client Information

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

Valid Matrix Codes

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	EPA 6010 Dissolved Mn	SM 2540C TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	GW.074937.121514.CM.MW-1	WT	G			12/15/14	1525		2	X		X							X	X		(BP3N) / (BP3F) 001
2	GW.074937.121514.CM.MW-2	WT	G			12/15/14	1450		2	X		X							X	X		002
3	GW.074937.121514.CM.MW-3	WT	G			12/15/14	1455		2	X		X							X	X		003
4	GW.074937.121514.CM.MW-4	WT	G			12/15/14	1520		2	X		X							X	X		004
5	GW.074937.121514.CM.dup	WT	G			12/15/14	—		1	X										X		(BP3N) 005
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Lab ID: 60164896

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 have been field filtered	Cassie Brown	12/17/14	1500	Pace Pace	12/18/14	900	3.7	Y	Y	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Cassie Brown
SIGNATURE of SAMPLER: Cassie Brown
DATE Signed (MM/DD/YY): 12/17/14

*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.