

3R-90

**Annual
Groundwater
Monitoring Report**

**Date:
2006**

**2006 ANNUAL MONITORING REPORT
CONOCOPHILLIPS
NELL HALL #1
FLORA VISTA, NM
OCD # 3R0090**




ConocoPhillips


TETRA TECH, INC.

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GROUNDWATER MONITORING REPORT

CONOCOPHILLIPS NELL HALL #1 FLORA VISTA, NEW MEXICO

OCD # 3R0090

Prepared for:



600 North Dairy Ashford
Houston, TX 77079

Prepared by:



TETRA TECH, INC.

6121 Indian School Rd. NE
Albuquerque, NM 87110
Tetra Tech Project No. 5690070.100

January 3, 2007

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GROUNDWATER MONITORING REPORT NELL HALL #1, FLORA VISTA, NEW MEXICO

1.0 INTRODUCTION

This report presents the results of the annual groundwater monitoring event conducted on November 15, 2006 at the ConocoPhillips Nell Hall #1 Site in Flora Vista, New Mexico, by Tetra Tech, Inc. (Tetra Tech).

The site is located northeast of Farmington, New Mexico on Flora Vista Road in Flora Vista, New Mexico approximately 2 miles west of Aztec, New Mexico. The site consists of a gas production well and associated equipment and installations. The location and general features of the Nell Hall #1 site are shown on Figures 1 and 2, respectively.

The environmental investigation at this site began with the attempted closure of an unlined dehydrator discharge pit in the early 1990's. Soil and groundwater impacts were discovered and three monitoring wells were installed. Due to an ongoing drought, the wells became dry. Souder Miller and Associates installed three additional monitoring wells to greater depths on February 17 and 18, 2004. MW-4 and MW-6 were installed to 35 feet below ground surface (bgs) with 30 feet of slotted screen and MW-5 was installed to 39 feet bgs with 35 feet of slotted screen.

On November 15, 2006 Tetra Tech was onsite to conduct a groundwater sampling event. Groundwater samples from MW-4, MW-5, and MW-6 were collected and shipped to Lancaster Laboratories in Lancaster, Pennsylvania to be analyzed for the presence of benzene, toluene, ethylbenzene, and xylenes (BTEX), sulfate, nitrate, phosphate, and ferrous iron.

2.0 METHODOLOGY AND RESULTS

The following describes the groundwater monitoring methodology and results:

2.1 Groundwater Monitoring Methodology

On November 15, monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6 were checked for the presence of water. Monitoring wells MW-4, MW-5, and MW-6 were purged of three volumes of water and sampled. A 1.5-inch dedicated, clear, poly-vinyl, disposable bailer was used to collect the groundwater sample. The purge water generated during the event was disposed of in the waste water tank located on site (Figure 2). During each event the groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped with chain of custody documentation to Lancaster Laboratories located in Lancaster, Pennsylvania. The samples were analyzed for the presence of BTEX by Environmental Protection Agency

(EPA) Method 8260B, sulfate and nitrate by EPA Method 300.0, phosphate by EPA Method 365.1, and ferrous iron by Standard Method (SM) 20, 3500-Fe B Modified.

A groundwater elevation contour map was created using the November 15, 2006 groundwater elevation data (Figure 3). Table 1 presents the well specifications, historical groundwater levels, and the top of casing survey results used to calculate the groundwater elevations at the site.

2.2 Groundwater Sampling Analytical Results

During the November 15, 2006 sampling event, the samples collected from MW-4 and MW-6 were below laboratory detection limits for BTEX, phosphate, and nitrate. The sample collected from MW-4 contained a ferrous iron concentration of 0.083 milligrams per liter (mg/l), and a sulfate concentration of 110 mg/l. The sample collected from MW-6 contained a ferrous iron concentration of 0.19 mg/l, and a sulfate concentration of 41.3 mg/l. The sample collected from MW-5 was below the laboratory detection limit for BTEX, ferrous iron, and phosphate. MW-5 contained a sulfate concentration of 77.9 mg/l, and a nitrate concentration of 2.3 mg/l. All results were below New Mexico Water Quality Control Commission (NMWQCC) standards. Table 2 summarizes laboratory analytical results for groundwater samples collected by Tetra Tech during the 2006 groundwater sampling event. The laboratory analytical reports are included as Appendix A.

2.3 Groundwater Remediation

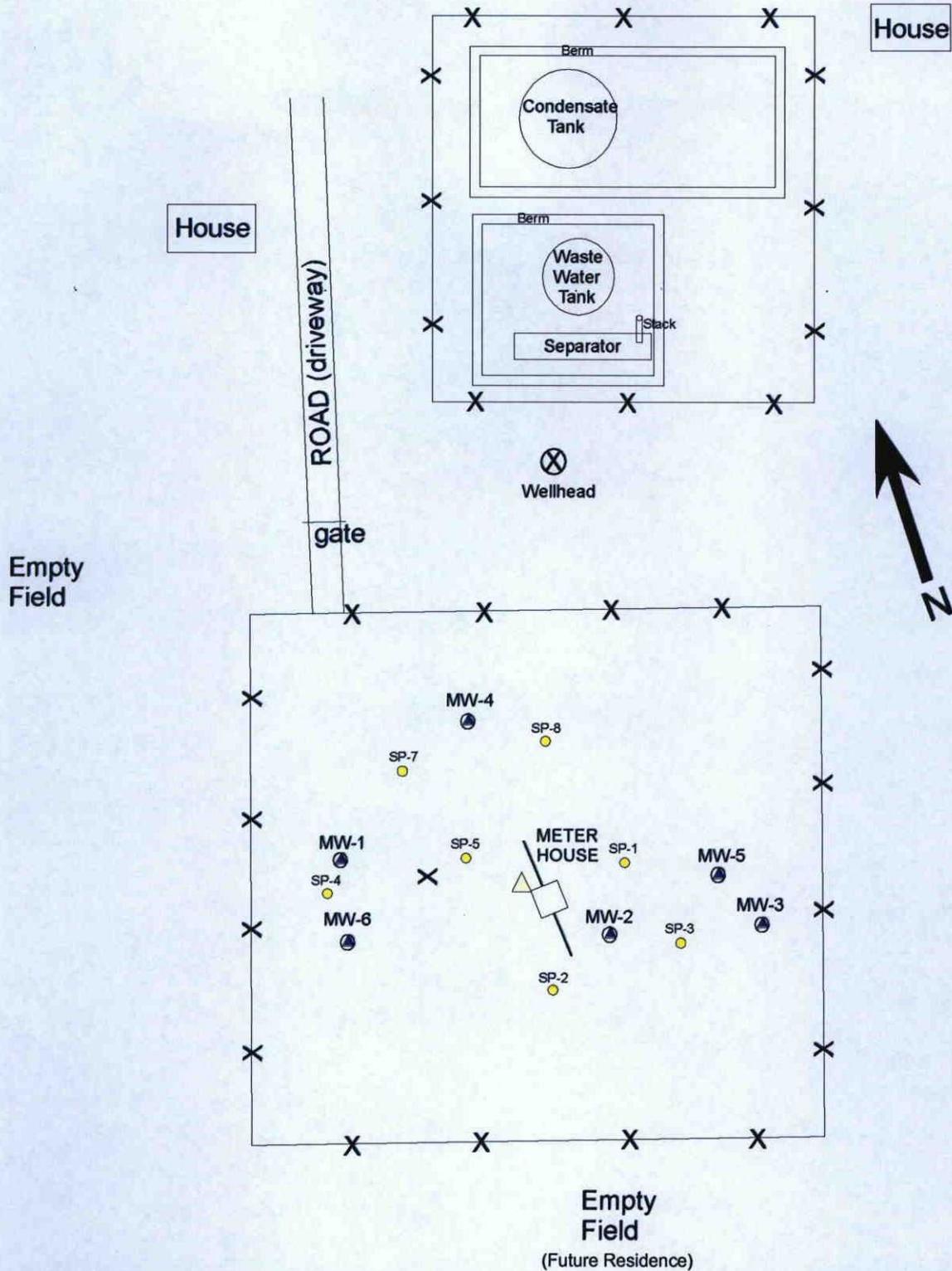
During the November 2006 groundwater sampling event, oxygen release compound (ORC®) socks were permanently removed from wells MW-4 and MW-6.

3.0 CONCLUSIONS

Monitoring wells MW-4 and MW-6 have historically contained benzene concentrations higher than the NMWQCC standard. During the November 2006 sampling event all monitoring wells had reached compliance for all constituents of concern. Tetra Tech is requesting permission from the New Mexico Oil and Conservation Division (OCD) to sample on a semi-annual monitoring schedule rather than quarterly. This is due to the absence of water during the winter and summer seasons when irrigation of the surrounding fields is at a minimum. Tetra Tech will conduct semi-annual monitoring with the next sampling event taking place in May 2007. If this is not OCD's understanding of the plan for future work, please contact Kelly Henderson at Tetra Tech within 30 business days at 505-237-8440 or kelly.henderson@tetrattech.com.

FIGURES

Flora Vista Road



LEGEND

- MW-2
● - Monitoring Well Locations
- SP-3
● - Sparge Point Locations
- △ - Survey Control Point
- X— - Fence

NOTE: SP-1 Removed.

FIGURE 2.
CONOCOPHILLIPS
NELL HALL #1 SITE MAP

Flora Vista Road

House

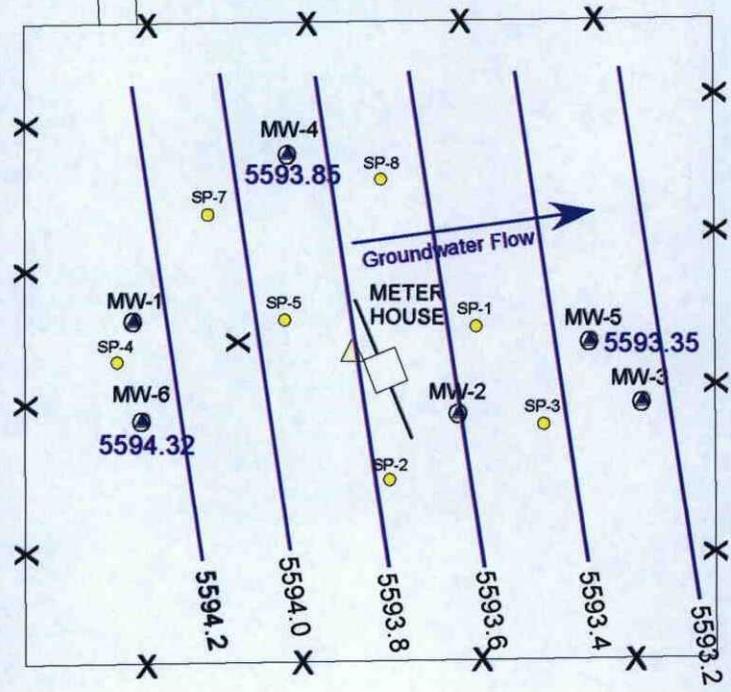
House

ROAD (driveway)

gate

Wellhead

Empty Field



Empty Field

(Future Residence)

SCALE



TETRA TECH, INC.

LEGEND

- MW-2 - Monitoring Well Locations
- SP-3 - Sparge Point Locations
- △ - Survey Control Point
- X - Fence
- - Groundwater Contour

NOTE: SP-1 Removed.

FIGURE 3.
CONOCOPHILLIPS
NELL HALL #1
GROUNDWATER ELEVATION
CONTOUR MAP (11/27/06)

TABLES

Table 1. ConocoPhillips Nell Hall #1 Monitoring Well Specifications and Groundwater Elevation Table

Well ID	Date Installed	Total Depth (ft. bgs)	Screen Interval (ft)	Elevation (ft. msl) (TOC)	Date Measured	Groundwater Level (ft TOC)	Groundwater Elevation (ft msl)
MW-4	2/18/2004	35	5-35	5614.87	3/8/2004	36.04	5578.83
					7/19/2004	8.44	5606.43
					10/27/2004	19.69	5595.18
					12/27/2004	27.58	5587.29
					5/10/2005	dry	
					11/22/2005	23.93	5590.94
					11/15/2006	21.02	5593.85
MW-5	2/17/2004	39	4-39	5615.86	3/8/2004	37.19	5578.67
					7/19/2004	9.38	5606.48
					10/27/2004	21.07	5594.79
					12/27/2004	28.99	5586.87
					5/10/2005	39.79	5576.07
					11/22/2005	25.23	5590.63
					11/15/2006	22.51	5593.35
MW-6	2/18/2004	35	5-35	5615.44	3/8/2004	36.27	5579.17
					7/19/2004	9.43	5606.01
					10/27/2004	19.33	5596.11
					12/27/2004	28.62	5586.82
					5/10/2005	dry	
					11/22/2005	25.02	5590.42
					11/15/2006	21.12	5594.32

ft. = Feet
 msl = Mean sea level
 TOC = Top of casing
 bgs = below ground surface

Table 2. ConocoPhillips Nell Hall #1 Groundwater Analytical Results Summary

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Ferrous Iron (mg/L)	Phosphate (mg/L)	
MW-4	3/8/2004	13	12	64	1,400	NA	NA	NA	NA	
	7/19/2004	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	
	10/27/2004	11	8	21	130	NA	NA	NA	NA	
	12/27/2004	<2.5	<2.5	<2.5	<0.5	NA	NA	NA	NA	
	5/11/2005	dry								
	11/22/2005	<0.5	<0.7	<0.8	<0.8	<0.40	105	2.7	<0.25	
	11/15/2006	<0.5	<0.7	<0.8	<0.8	<0.25	110	0.083	<0.25	
MW-5	3/8/2004	1.1	<0.5	1	17	NA	NA	NA	NA	
	7/19/2004	<0.5	0.55	<0.5	0.72	NA	NA	NA	NA	
	10/27/2004	<0.5	<0.5	<0.5	<1.0	NA	NA	NA	NA	
	12/27/2004	<0.5	<0.5	<0.5	<1.0	NA	NA	NA	NA	
	5/11/2005	<0.5	<0.7	<0.8	<0.8	2.3	139	<0.0080	1.2	
	11/22/2005	<0.5	<0.7	<0.8	<0.8	<0.40	38	<0.0080	0.43	
	11/15/2006	<0.5	<0.7	<0.8	<0.8	2.3	77.9	<0.0080	<0.25	
MW-6	3/8/2004	2,500	14	1,600	21,031	NA	NA	NA	NA	
	7/19/2004	<0.5	<0.5	0.98	2.6	NA	NA	NA	NA	
	10/27/2004	0.4	0.3	0.5	2.1	NA	NA	NA	NA	
	12/27/2004	45	6.8	14	71.7	NA	NA	NA	NA	
	5/11/2005	dry								
	11/22/2005	10	0.7	16	150	<0.40	3.4	7.7	2.8	
	11/15/2006	<0.5	<0.7	<0.8	<0.8	<0.25	41.3	0.19	<0.25	
NMWQCC Standards		10 (µg/L)	750 (µg/L)	750 (µg/L)	620 (µg/L)	10 (mg/L)	600 (mg/L)	1 (mg/L)	NE	

NMWQCC = New Mexico Water Quality Control Commission
 mg/L = milligrams per liter (parts per million)
 µg/L = micrograms per liter (parts per billion)
 NE=Not Established
 NA = Not Analyzed

APPENDIX A
LABORATORY REPORT



2425 New Holland Pike, PO Box 12426, Lancaster, PA 17605-2425 • 717-658-2300 Fax: 717-658-2881 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared for:

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1014498. Samples arrived at the laboratory on Thursday, November 16, 2006. The PO# for this group is 4506560640 and the release number is KINGER.

Client Description

MW-4 Grab Water Sample
MW-5 Grab Water Sample
MW-6 Grab Water Sample
Trip Blank Water Sample

Lancaster Labs Number

4917295
4917296
4917297
4917298

ELECTRONIC Tetra Tech, Inc
COPY TO

Attn: Kelly Henderson



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17805-2425 • 717-656-2300 Fax: 717-656-2881 • www.lancasterlabs.com

Questions? Contact your Client Services Representative
Barbara A Weyandt at (717) 656-2300

Respectfully Submitted,

Robert Heisey

Robert Heisey
Senior Specialist



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17805-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Lancaster Laboratories Sample No. WW 4917295

MW-4 Grab Water Sample
Site# 6084
Nell Hall #1, NM

Collected: 11/15/2006 12:00 by AM

Account Number: 11288

Submitted: 11/16/2006 09:00
Reported: 11/22/2006 at 15:16
Discard: 12/23/2006

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

NELL4

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Units	Dilution Factor
00228	Sulfate	14808-79-8	110.	3.0	10.0	mg/l	10
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.25	0.31	mg/l	1
00368	Nitrate Nitrogen	14797-55-8	N.D.	0.25	0.50	mg/l	5
08344	Ferrous Iron	n.a.	0.083	0.0080	0.10	mg/l	1
02300	GC/MS Volatiles						
05401	Benzene	71-43-2	N.D.	0.5	5.	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	5.	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	5.	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	5.	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	11/17/2006 20:50	Ashley M Heckman	10
00345	Total Phosphorus as PO4 water	EPA 365.1	1	11/22/2006 11:16	Nicole M Kepley	1
00368	Nitrate Nitrogen	EPA 300.0	1	11/16/2006 14:59	Ashley M Heckman	5
08344	Ferrous Iron	SM20 3500-Fe B modified	1	11/16/2006 21:20	Daniel S Smith	1
02300	GC/MS Volatiles	SW-846 8260B	1	11/19/2006 17:16	Michael A Ziegler	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	11/19/2006 17:16	Michael A Ziegler	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	11/17/2006 18:30	Carolyn M Mastropietro	1

*=This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Page 1 of 1

Lancaster Laboratories Sample No. WW 4917296

MW-5 Grab Water Sample
 Site# 6084
 Nell Hall #1, NM

Collected: 11/15/2006 13:10 by AM

Account Number: 11288

Submitted: 11/16/2006 09:00
 Reported: 11/22/2006 at 15:16
 Discard: 12/23/2006

ConocoPhillips
 PO Box 2200
 Bartlesville OK 74005

NELL5

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Units	Dilution Factor
00228	Sulfate	14808-79-8	77.9	3.0	10.0	mg/l	10
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.25	0.31	mg/l	1
00368	Nitrate Nitrogen	14797-55-8	2.3	0.25	0.50	mg/l	5
08344	Ferrous Iron	n.a.	N.D.	0.0080	0.10	mg/l	1
02300	GC/MS Volatiles						
05401	Benzene	71-43-2	N.D.	0.5	5.	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	5.	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	5.	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	5.	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	11/17/2006 21:05	Ashley M Heckman	10
00345	Total Phosphorus as PO4 water	EPA 365.1	1	11/22/2006 11:17	Nicole M Kepley	1
00368	Nitrate Nitrogen	EPA 300.0	1	11/16/2006 15:15	Ashley M Heckman	5
08344	Ferrous Iron	SM20 3500-Fe B modified	1	11/16/2006 21:20	Daniel S Smith	1
02300	GC/MS Volatiles	SW-846 8260B	1	11/19/2006 17:39	Michael A Ziegler	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	11/19/2006 17:39	Michael A Ziegler	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	11/17/2006 18:30	Carolyn M Mastropietro	1

*=This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

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Lancaster Laboratories Sample No. WW 4917297

MW-6 Grab Water Sample
Site# 6084
Nell Hall #1, NM

Collected: 11/15/2006 15:00 by AM

Account Number: 11288

Submitted: 11/16/2006 09:00
Reported: 11/22/2006 at 15:16
Discard: 12/23/2006

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

NELL6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Units	Dilution Factor
00228	Sulfate	14808-79-8	41.3	1.5	5.0	mg/l	5
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.25	0.31	mg/l	1
00368	Nitrate Nitrogen	14797-55-8	N.D.	0.25	0.50	mg/l	5
08344	Ferrous Iron	n.a.	0.19	0.0080	0.10	mg/l	1
02300	GC/MS Volatiles						
05401	Benzene	71-43-2	N.D.	0.5	5.	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	5.	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	5.	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	5.	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
00228	Sulfate	EPA 300.0	1	11/16/2006 15:30	Ashley M Heckman	5
00345	Total Phosphorus as PO4 water	EPA 365.1	1	11/22/2006 11:18	Nicole M Kepley	1
00368	Nitrate Nitrogen	EPA 300.0	1	11/16/2006 15:30	Ashley M Heckman	5
08344	Ferrous Iron	SM20 3500-Fe B modified	1	11/16/2006 21:20	Daniel S Smith	1
02300	GC/MS Volatiles	SW-846 8260B	1	11/19/2006 18:03	Michael A Ziegler	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	11/19/2006 18:03	Michael A Ziegler	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	11/17/2006 18:30	Carolyn M Mastropietro	1

*=This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Page 1 of 1

Lancaster Laboratories Sample No. WW 4917298

Trip Blank Water Sample
Site# 6084
Nell Hall #1, NM

Collected: 11/15/2006 16:00

Account Number: 11288

Submitted: 11/16/2006 09:00
Reported: 11/22/2006 at 15:16
Discard: 12/23/2006

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

NELLT

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Units	Dilution Factor
02300	GC/MS Volatiles						
05401	Benzene	71-43-2	N.D.	0.5	5.	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	5.	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	5.	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	5.	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	GC/MS Volatiles	SW-846 8260B	1	11/19/2006 18:26	Michael A Ziegler	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	11/19/2006 18:26	Michael A Ziegler	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

 Client Name: ConocoPhillips
 Reported: 11/22/06 at 03:16 PM

Group Number: 1014498

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 06320196101B	Sample number(s): 4917295-4917297								
Sulfate	N.D.	0.30	1.0	mg/l	100		89-110		
Nitrate Nitrogen	N.D.	0.050	0.10	mg/l	102		90-110		
Batch number: 06320834401A	Sample number(s): 4917295-4917297								
Ferrous Iron	N.D.	0.0080	0.10	mg/l	99		95-105		
Batch number: 06321110101A	Sample number(s): 4917295-4917297								
Total Phosphorus as PO4 water	N.D.	0.25	0.31	mg/l	99		90-110		
Batch number: T063231AA	Sample number(s): 4917295-4917298								
Benzene	N.D.	0.5	5.	ug/l	103	107	85-117	4	30
Toluene	N.D.	0.7	5.	ug/l	97	100	85-115	3	30
Ethylbenzene	N.D.	0.8	5.	ug/l	98	102	82-119	4	30
Xylene (Total)	N.D.	0.8	5.	ug/l	98	102	83-113	5	30

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
 Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	BKG MAX	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 06320196101B	Sample number(s): 4917295-4917297 UNSPK: P917319 BKG: P917319							
Sulfate	106	90-110			215.	211.	2	3
Nitrate Nitrogen	100	90-110			6.9	6.2	10*	2
Batch number: 06320834401A	Sample number(s): 4917295-4917297 UNSPK: P917629 BKG: P917629							
Ferrous Iron	99	98	86-110	1	4	3.6	3.6	1 (1) 8
Batch number: 06321110101A	Sample number(s): 4917295-4917297 UNSPK: 4917297 BKG: 4917297							
Total Phosphorus as PO4 water	106	90-110			N.D.	N.D.	16* (1)	3
Batch number: T063231AA	Sample number(s): 4917295-4917298 UNSPK: P917231							
Benzene	107	83-128						
Toluene	97	83-127						
Ethylbenzene	101	82-129						
Xylene (Total)	99	82-130						

Surrogate Quality Control

*- Outside of specification

**- This limit was used in the evaluation of the final result for the blank

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.

Quality Control Summary

 Client Name: ConocoPhillips
 Reported: 11/22/06 at 03:16 PM

Group Number: 1014498

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

 Analysis Name: UST-Unleaded Waters by 8260B
 Batch number: T063231AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4917295	99	94	92	96
4917296	98	97	93	93
4917297	98	94	96	107
4917298	99	92	91	93
Blank	98	94	93	94
LCS	96	94	95	97
LCSD	97	98	95	97
MS	96	96	94	96
Limits:	80-116	77-113	80-113	78-113

*- Outside of specification

**-This limit was used in the evaluation of the final result for the blank

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.

Lancaster Laboratories Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	BMQL	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	MPN	Most Probable Number
IU	International Units	CP Units	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	NTU	nephelometric turbidity units
C	degrees Celsius	F	degrees Fahrenheit
Cal	(diet) calories	lb.	pound(s)
meq	milliequivalents	kg	kilogram(s)
g	gram(s)	mg	milligram(s)
ug	microgram(s)	l	liter(s)
ml	milliliter(s)	ul	microliter(s)
m3	cubic meter(s)	fib >5 um/ml	fibers greater than 5 microns in length per ml
<	less than – The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
>	greater than		
ppm	parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.		

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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