3R - 090

SEMI-ANNUAL GWMR

09/10/2010

3R090

SEMI-ANNUAL GROUNDWATER MONITORING REPORT APRIL and JUNE 2010 SAMPLING EVENTS

CONOCOPHILLIPS COMPANY
NELL HALL No. 1
FLORA VISTA, NEW MEXICO

OCD # 3R0090
API # 30-045-09619

Prepared for:

ConocoPhillips

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September 10, 2010

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Site History 1
2.0 METHODOLOGY AND RESULTS 1
2.1 Groundwater Monitoring Methodology 2
2.2 Groundwater Sampling Analytical Results 3
3.0 CONCLUSIONS 3
4.0 REFERENCES 4

FIGURES

1. Site Location Map
2. Site Layout Map
3. MW-5 Hydrograph (March 2004 – June 2010)
4. MW-6 Hydrograph (March 2004 – June 2010)
5. Groundwater Elevation Contour Map June 2010
6. Inverse Relationship between Benzene and Depth to Water in MW-6
7. Geologic Cross-Section

TABLES

1. Site History Timeline
2. Groundwater Elevation Summary (March 2004 – June 2010)
3. Groundwater Laboratory Analytical Results Summary (March 2004 – June 2010)

APPENDICES

Appendix A Groundwater Sampling Field Forms
Appendix B Laboratory Analytical Reports

SEMI-ANNUAL GROUNDWATER MONITORING REPORT CONOCOPHILLIPS COMPANY NELL HALL NO. 1 FLORA VISTA, NEW MEXICO

1.0 INTRODUCTION

This report presents the results of a semi-annual groundwater monitoring event conducted by Tetra Tech, Inc. (Tetra Tech) on March 31 and April 1, and June 9, 2010, at the ConocoPhillips Company Nell Hall No. 1 site in Flora Vista, New Mexico (Site).

The Site is located on private land off 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. The location and general features of the Site are presented as **Figures 1 and 2**, respectively.

1.1 Site History

The history of the Site is outlined in **Table 1** and discussed in more detail in the following paragraphs.

Environmental investigation at the Site began when closure of an unlined dehydrator discharge pit was attempted in the early 1990's. Soil impacts were discovered during earthmoving activities and groundwater Monitor Wells MW-1, MW-2, and MW-3 were subsequently installed to determine if hydrocarbons had impacted groundwater beneath the Site. An ongoing drought caused the water table to fall below the screened intervals of MW-1, MW-2, and MW-3. On February 17 and 18, 2004, Souder Miller and Associates (SMA) installed Monitor Wells MW-4, MW-5, and MW-6 at sufficient depths to intersect the water table and to account for the effects of further seasonal or drought-based water table fluctuations (Souder Miller and Associates, 2004).

Tetra Tech began quarterly sampling of Monitor Wells MW-4, MW-5, and MW-6 in 2004; then moved to sampling on a semi-annual basis in 2005, and annually beginning in 2006. Semi-annual sampling was resumed in 2007 due to seasonal groundwater fluctuations. The latest semi-annual sampling event was performed by Tetra Tech on March 31 and April 1, 2010; however due to lack of water in MW-4, Tetra Tech returned to the Site on June 9, 2010 to collect a full round of samples, including MW-4.

2.0 METHODOLOGY AND RESULTS

2.1 Groundwater Monitoring Methodology

Groundwater Elevation Measurements

Depth to groundwater was gauged at Monitor Wells MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6 using a dual interface probe prior to sampling. Groundwater elevations were recorded on Tetra Tech groundwater sampling field forms (**Appendix A**) and are presented in **Table 2**. For determination of flow direction and gradient, only water levels in Monitor Wells MW-4, MW-5, and MW-6 were taken into account. Data points from MW-1, MW-2, and MW-3 were not considered due to uncertainty of the survey

data for those data points. In order to verify data, Tetra Tech will survey all monitoring wells during the next sampling event scheduled for September 2010.

Hydrographs illustrating groundwater level fluctuations since March 2004 in Monitor Wells MW-5 and MW-6 are presented as **Figure 3** and **Figure 4**, respectively. These data indicates that groundwater elevations are consistently lowest during the late-winter and early-spring months. Historically, the groundwater flow direction and gradient vary from season to season. These fluctuations are believed to be the result of changes in irrigation rates or in base-flow conditions in the Animas River, which, at its closest point, lies approximately 0.6 mile to the south, southeast of the Site (**Figure 1**). A Groundwater elevation contour map was created using June 2010 data, and is included as **Figure 5**. Since water levels from only two monitoring wells were available during the March/April 2010 monitoring event, a groundwater contour elevation map could not be made.

Groundwater Sampling

Groundwater samples were collected from Monitor Wells MW-5 and MW-6 during the March/April 2010 event and from MW-4, MW-5, and MW-6 during the June 2010 event as a continuation of semi-annual monitoring at the Site. Approximately three well volumes were purged from each monitor well with a dedicated polyethylene 1.5-inch disposable bailer prior to sampling. Purge water generated during the event was disposed of in the on-site produced water tank (**Figure 2**). Groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped under chain-of-custody documentation to Southern Petroleum Laboratory located in Houston, Texas. The samples were analyzed for the presence of benzene, toluene, ethylbenzene and xylenes (BTEX) by Environmental Protection Agency (EPA) Method 8260B and for dissolved iron by EPA Method 6010B.

Ferrous iron testing was conducted during prior sampling events. Tetra Tech changed the sampling protocol to analyze dissolved iron instead of ferrous iron since New Mexico Water Quality Control Commission (NMWQCC) standards are based on dissolved iron. Dissolved iron samples were collected in unpreserved containers supplied by the laboratory, and were filtered and preserved by laboratory personnel prior to analysis.

2.2 Groundwater Sampling Analytical Results

Only Monitor Wells MW-5 and MW-6 were sampled during the March 31 - April 1, 2010 sampling event. Monitor Well MW-4 was dry. Laboratory results for MW-5 were below laboratory detection limits for all analyzed constituents. Sample results for MW-6 indicated benzene over the NMWQCC standard at 480 micrograms per liter (ug/L). All other constituents were below the standards or below laboratory detection limits. The sample for dissolved iron could not be collected from MW-6 during this event due to low water volume in the well.

During the June 9, 2010 sampling event, samples were collected from MW-4, MW-5, and MW-6. Groundwater samples from MW-4 and MW-5 were below laboratory detection limits for BTEX and dissolved iron. The groundwater sample collected from MW-6 contained 11.06 milligrams per liter (mg/L) dissolved iron, which is above the NMWQCC groundwater quality standard of 1 mg/L. Benzene, toluene,

ethylbenzene and xylenes were detected in MW-6 at concentrations of 96 micrograms per liter (ug/L), 4.7 ug/L, 62 ug/L and 120 ug/L, respectively. The benzene concentration for MW-6 is above the NMWQCC quality standard of 10 ug/L.

Benzene concentrations in MW-6 have fluctuated throughout previous groundwater sampling events at the Site (**Table 3**). These results are postulated to be related to the fluctuating water table at the Site. To demonstrate this possibility, a graph depicting benzene and depth to water versus time in MW-6 was prepared and is attached as **Figure 6**. The graph illustrates an inverse relationship between benzene concentrations and water column thickness in this monitor well. Historically, elevated benzene concentrations in MW-6 (peaking at 2,500 ug/L in March 2004) should be viewed in this regard. It should also be noted that the March 2004 groundwater sample was collected immediately following installation of MW-6 in February 2004, in which soil samples collected at 25 and 30 feet bgs each resulted in an exceedence of the 50 milligram per kilogram (mg/kg) regulatory limit for BTEX, and soil samples collected at 25, 30, and 35 feet bgs were found to contain total petroleum hydrocarbons (TPH) at levels greater than the 100 mg/kg regulatory limit (SMA, 2004).

Historical laboratory analytical data are summarized on **Table 3**. A geologic cross-section is included as **Figure 7**. The laboratory analytical report is presented in **Appendix B**.

3.0 CONCLUSIONS

Tetra Tech will continue semi-annual groundwater sampling at the Site. The next groundwater sampling event is tentatively scheduled for September 2010. Samples will be collected from MW-4, MW-5, and MW-6 for BTEX analyses by EPA Method 8260B and dissolved iron by EPA Method 6010B. Please contact Kelly Blanchard at 505-237-8440 or kelly.blanchard@tetratech.com if you have any questions or require additional information.

4.0 REFERENCES

Souder Miller and Associates (2004). *Nell Hall Monitor well Installation Report.* Prepared for ConocoPhillips Company Report Dated May 7. 64 pp.

Vance, David B. 1994. Online version of: 'Iron – The Environmental Impact of a Universal Element'. National Environmental Journal May/June. 4(3): 24-25. <www.http://2the4.net/iron.htm>.

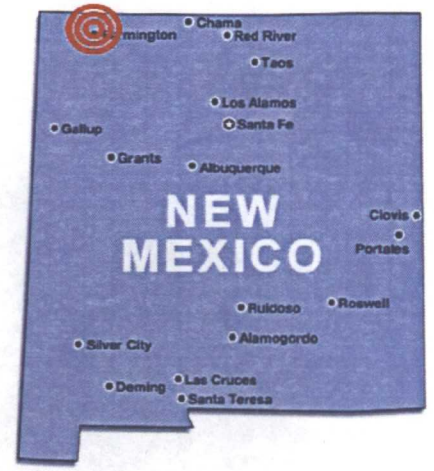
FIGURES

1. Site Location Map
2. Site Layout Map
3. MW-5 Hydrograph (March 2004 – June 2010)
4. MW-6 Hydrograph (March 2004 – June 2010)
5. Groundwater Elevation Contour Map June 2010
6. Inverse Relationship between Benzene and Depth to Water in MW-6
7. Geologic Cross Section

ConocoPhillips 2008 High Resolution Aerial Photography

FIGURE 1.

Site Location Map
ConocoPhillips Company
Nell Hall No. 1
Flora Vista, New Mexico
Sec 07, Twp 30N, Rng 11W



Approximate ConocoPhillips Nell Hall #1 Site location

N

TETRA TECH, INC.

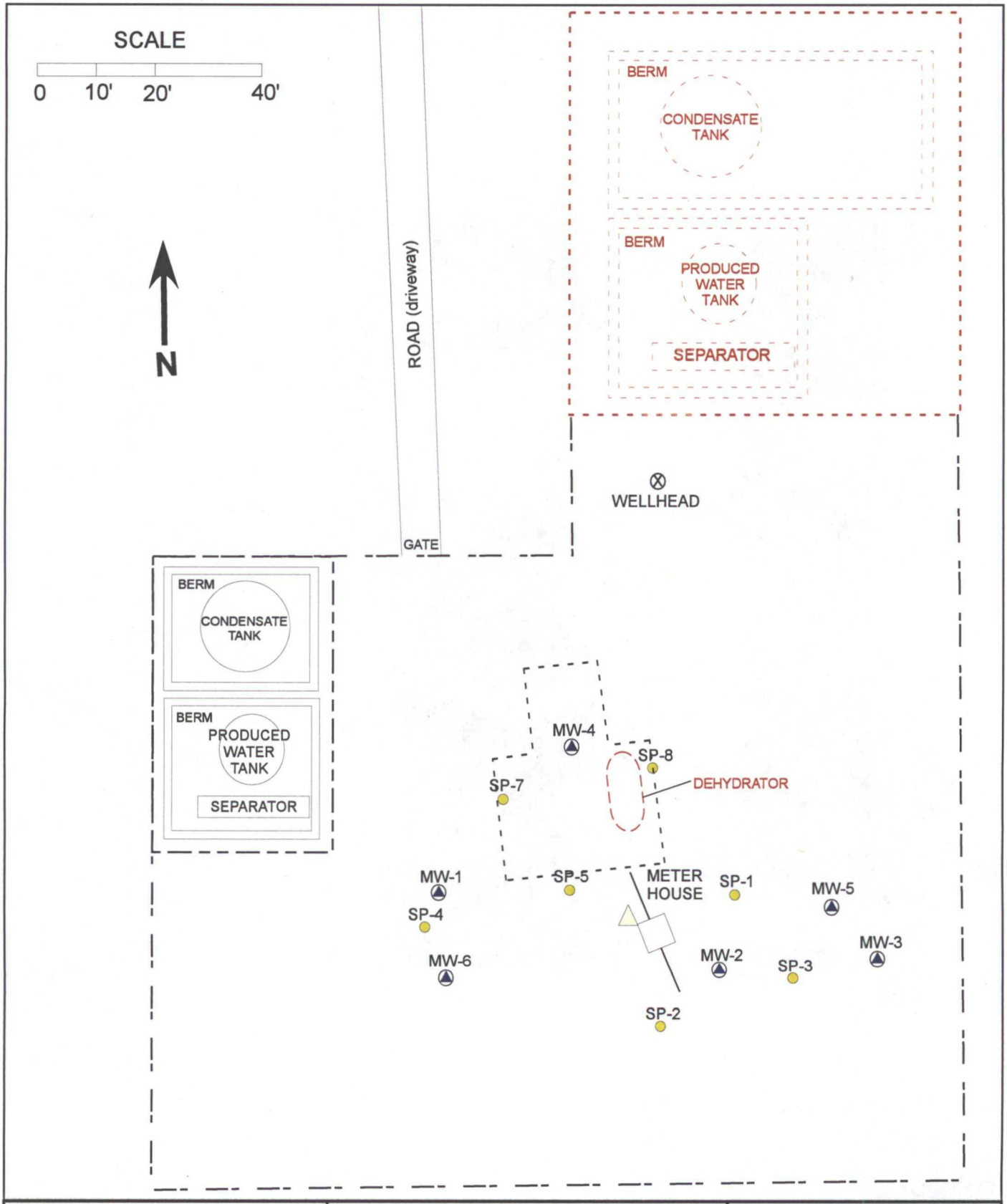


FIGURE 2:
SITE LAYOUT MAP
CONOCOPHILLIPS COMPANY
Nell Hall No. 1
Flora Vista, New Mexico
Sec 07, Twp 30N, Rng 11W

LEGEND

MW-2 - Monitoring Well Locations
SP-3 - Sparge Point Locations
- Survey Control Point
- Fence
- Previous Equipment Placement
- Approximate 1994 Excavation Location

NOTE: SP-1 Removed.

TETRA TECH, INC.

Figure 3. MW-5 Hydrograph (March 2004 - June 2010) - ConocoPhillips Company Nell Hall No.1

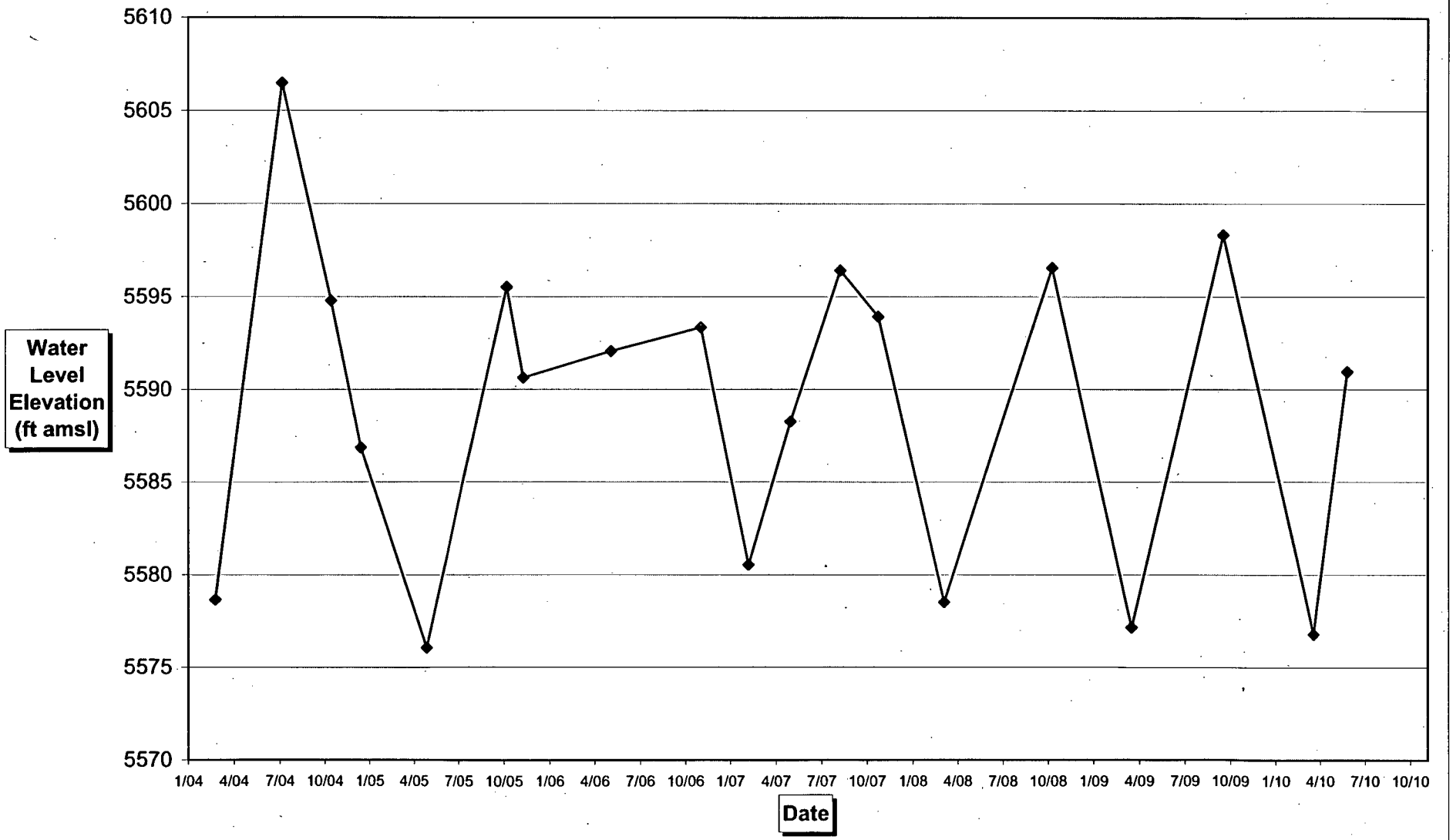
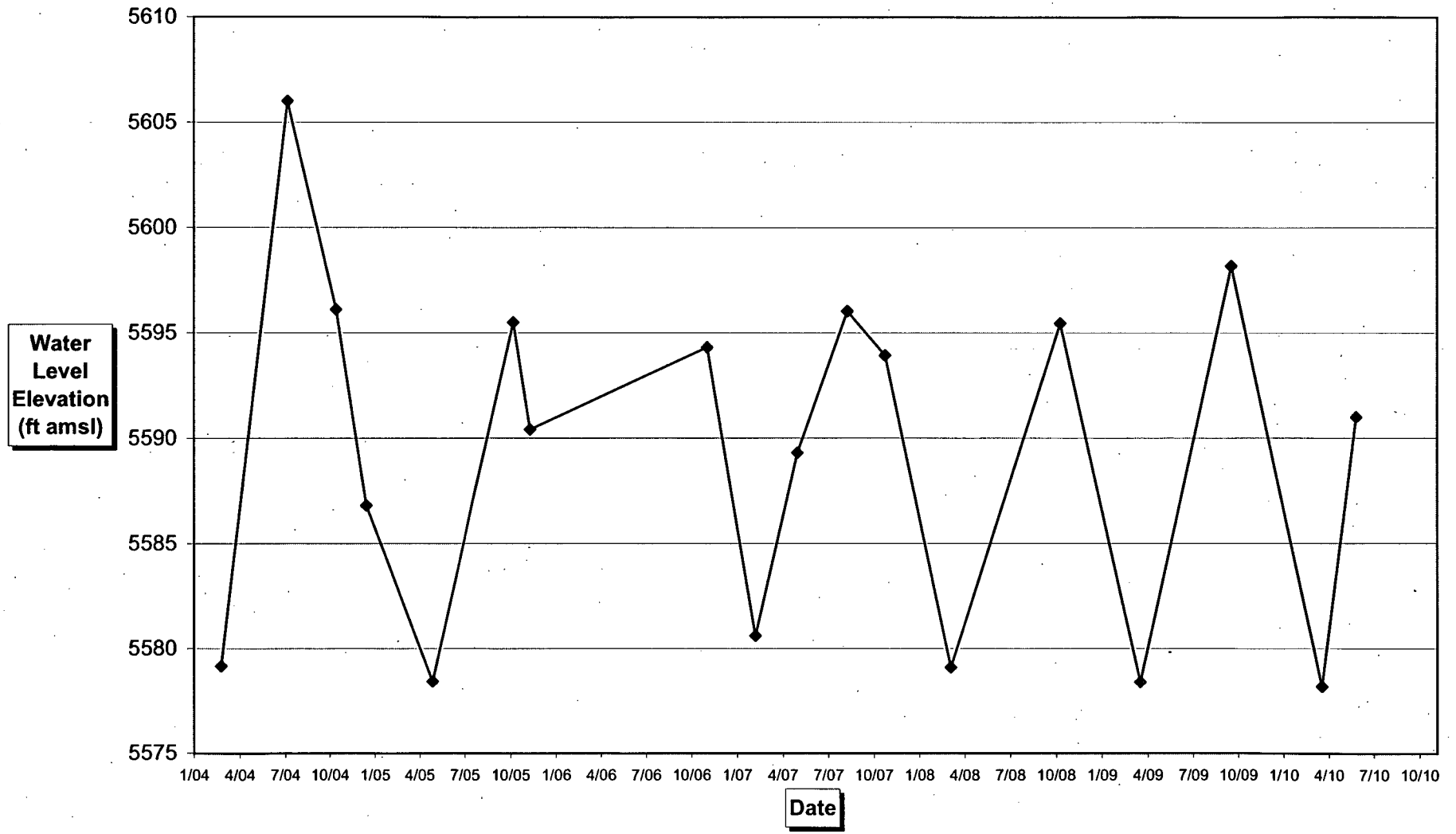


Figure 4. MW-6 Hydrograph (March 2004 - June 2010) - ConocoPhillips Company Nell Hall No. 1



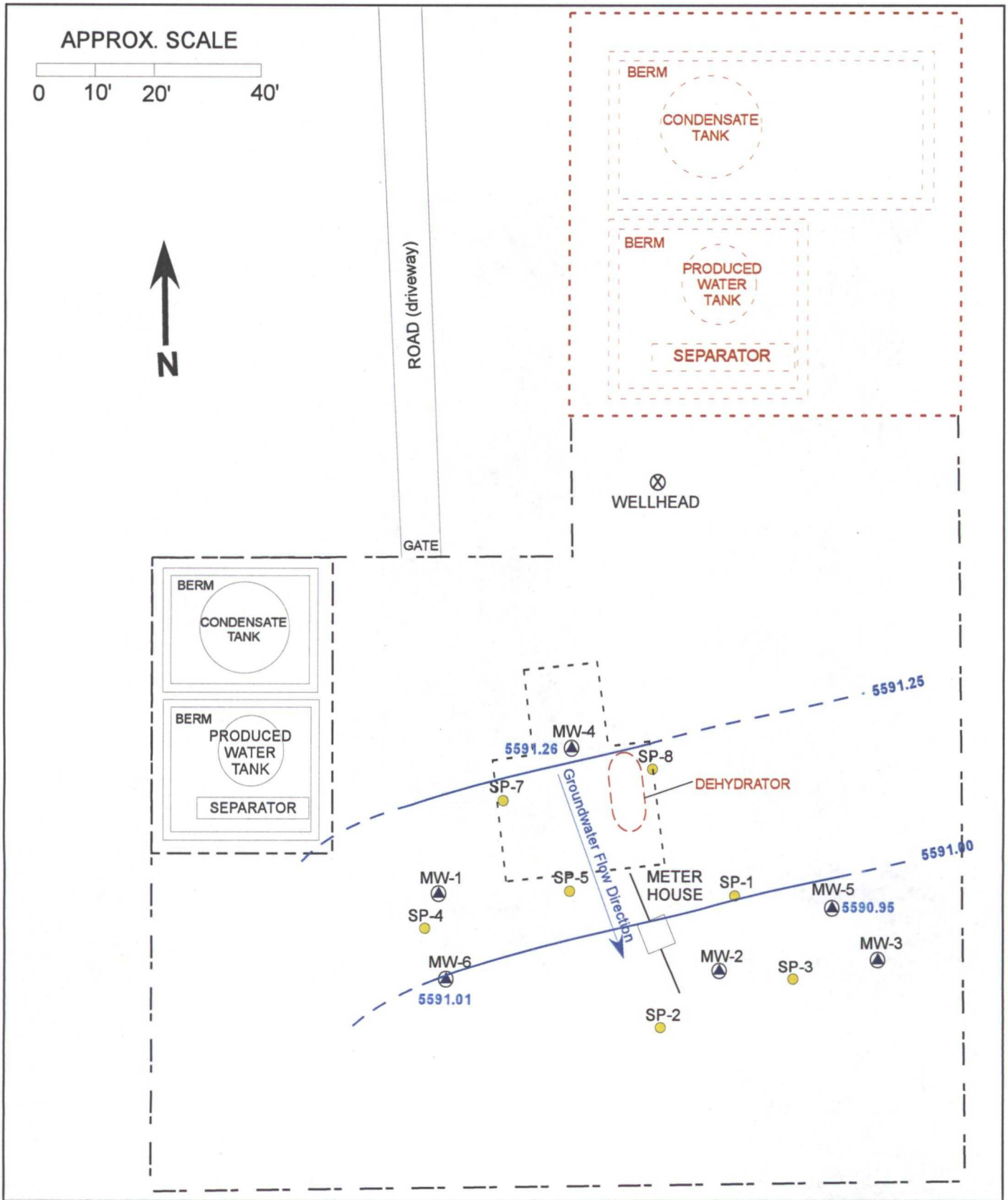


FIGURE 5:
GROUNDWATER ELEVATION CONTOUR MAP
CONOCOPHILLIPS COMPANY
Nell Hall No. 1 (June 9, 2010)
Unit M, Sec 07, T30N, R11W
API # - 30-045-09619
San Juan County, New Mexico

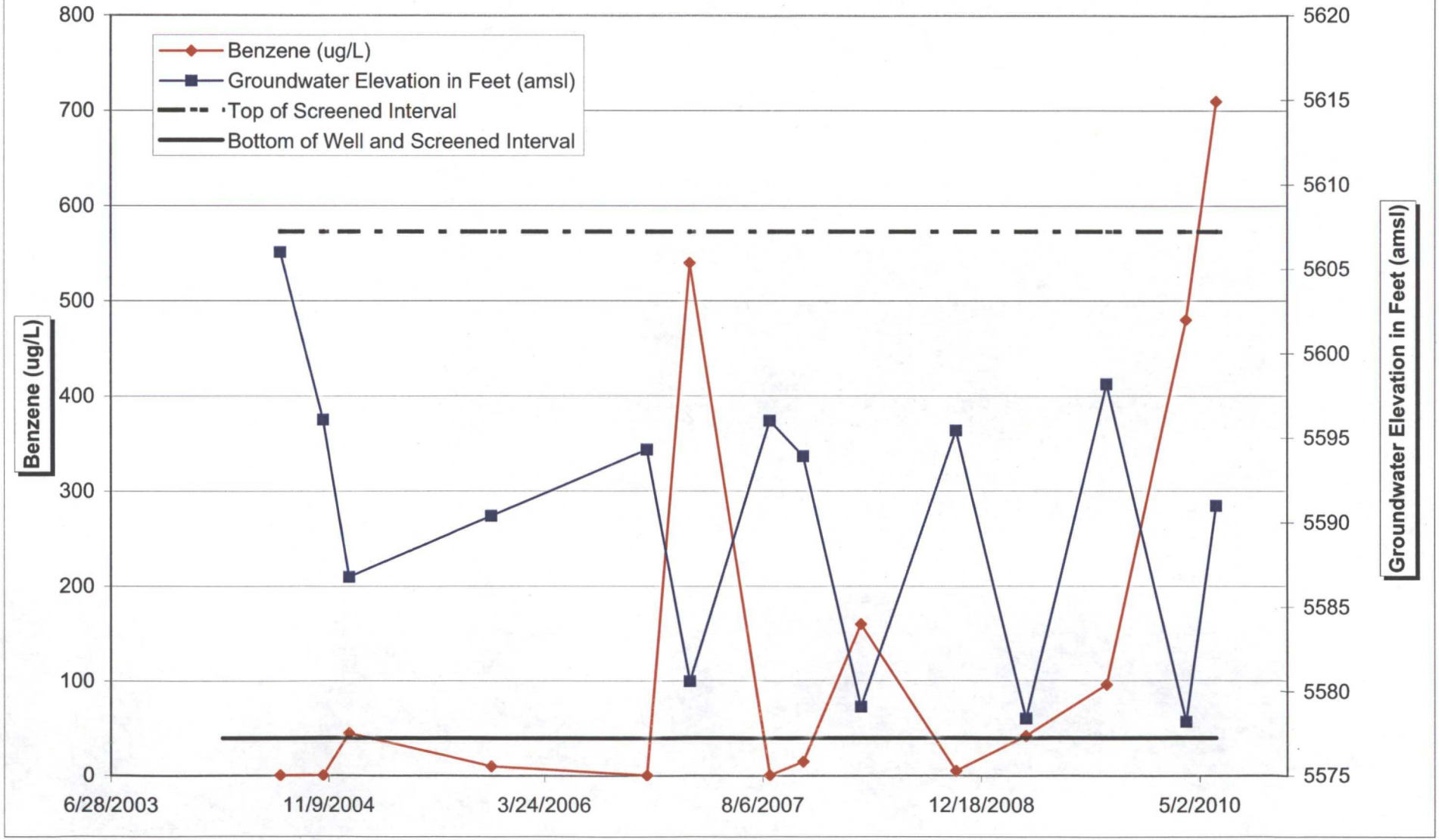
LEGEND

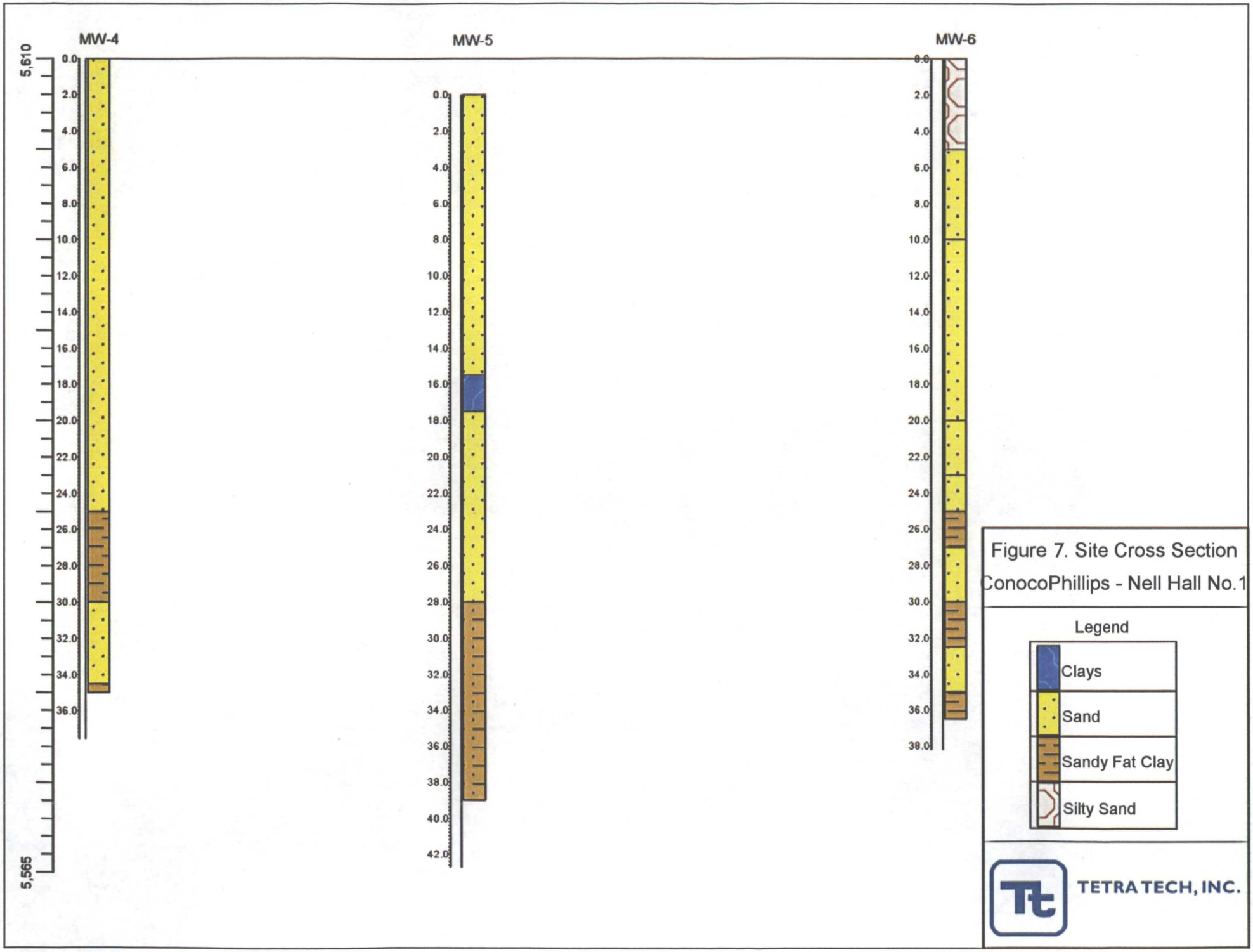
- ▲ - Monitoring Well Locations
- ● - Sparge Point Locations
- — — - Fence
- - - - - Previous Equipment Placement
- - - - - Approximate 1994 Excavation Location
- —— - Groundwater Elevation Contour (dashed where inferred)

NOTE: SP-1 Removed.

TETRA TECH, INC.

Figure 6. Inverse Relationship Between Benzene and Depth to Water in MW-6
ConocoPhillips Company Nell Hall No.1




MW-4
MW-5
MW-6
5,610
5,565
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
16.0
18.0
20.0
22.0
24.0
26.0
28.0
30.0
32.0
34.0
36.0
38.0
40.0
42.0
Figure 7. Site Cross Section
ConocoPhillips - Nell Hall No.1
Legend
Clays
Sand
Sandy Fat Clay
Silty Sand
TETRA TECH, INC.

TABLES

1. Site History Timeline

2. Groundwater Elevation Summary (March 2004 – June 2010)

3. Laboratory Analytical Data Summary (March 2004 – June 2010)

Table 1. Site History Timeline - ConocoPhillips Company Nell Hall No. 1

Date/Time Period	Event/Action	Description/Comments
February 20, 1961	Well Spudded	Southwest Production Company spudded the Nell Hall No. 1
September 1, 1963	Operator Change	Beta Development Company acquired the Nell Hall No. 1 from Southwest Production Company
September 15, 1988	Operator Change	Mesa Operating Limpited Partnership acquired the Nell Hall No. 1 from Beta Development Compnay
July 1, 1991	Operator Change	Conoco Inc. acquired the Nell Hall No. 1 from Mesa Operating Limited Partnership
May 3, 1994	Pit Remediation	Conoco stopped flow to the dehydrator, sampled the soil in the unlined dehydrator pit and encountered hydrocarbon-impacted soil.
August 31 through September 1, 1994	Pit Remediation	Conoco removed the dehydrator and Flint Engineering & Construction Co. excavated soil in the vicinity of the former dehydrator pit to a depth of 16 feet. A soil sample at the bottom of the excavation revealed TPH of 380 ppm.
September 21 through October 7, 1994	Pit Remediation	Flint landfarmed the excavated soil on site
June 1 and 2, 1995	Soil Borings and Groundwater Sampling	Philip Environmental Services Corp. completed initial subsurface assesment (3 temporary monitor wells and 3 additional borings)
June 15, 1995	Soil Borings and Groundwater Sampling	Philip Environmental Services Corp. completed an additional soil boring.
March 27, 1997	Monitor Well Sampling	On Site Technologies, LTD found insufficient water in the 3 monitor wells for sampling.
March, 2002	Groundwater sampling	Continued sampling recommended until four (4) sampling events demonstrate contamination levels below NMWQCC groundwater quality standards.
June, 2002	Groundwater sampling	Continued sampling recommended until four (4) sampling events demonstrate contamination levels below NMWQCC groundwater quality standards.
September, 2002	Groundwater sampling	Continued sampling recommended until four (4) sampling events demonstrate contamination levels below NMWQCC groundwater quality standards.
January 1, 2003	Operator Name Change	Conoco Inc. and Phillips Petroluem Company merged to form ConocoPhillips Company.
February 17 and 18, 2004	Monitor Well Installation	Monitor Wells MW-4, MW-5, and MW-6 were installed at deeper depths (35 to 39 feet BGS) to adequately intersect the water table, as previously installed groundwater monitoring wells continually went dry. The lowest water levels at the site are found to occur in early spring and late winter. Installed 30 to 35 feet of screen to allow for seasonal groundwater fluctuations of up to 25 feet.
March 8 through December 27, 2004	Monitor Well Sampling	Quarterly groundwater sampling of Monitor Wells MW-4, MW-5, and MW-6; benzene spike in March (MW-6) coincides with MW-6 well installation and discovery of BTEX and TPH impacts to soil at 25-35 feet bgs in MW-6 soil samples collected during drilling.
May 11 through November 22, 2005	Monitor Well Sampling	Semi-annual sampling of monitor wells MW-4, MW-5, and MW-6
November 15, 2006	Monitor Well Sampling	Annual sampling of monitor wells MW-4, MW-5, and MW-6

Table 1. Site History Timeline - ConocoPhillips Company Nell Hall No. 1

Date/Time Period	Event/Action	Description/Comments
February 21, 2007 through October 22, 2008	Monitor Well Sampling	Resumption of semi-annual sampling of Monitor Wells MW-4, MW-5, and MW-6 during summer and fall months when water is most likely to be present in wells.
February 4, 2008	PEPA Report	Preliminary Exposure Pathway Assessment (PEPA) report completed and submitted to ConocoPhillips; internal document for ConocoPhillips use only.
February 6, 2009	BTEX vs. depth to water plotted in MW-6	BTEX concentrations show inverse relationship to water column thickness in MW-6; plotted from 2/21/07 to 10/22/08 (N=5)
September 30, 2009	Monitor Well Sampling	Groundwater samples collected from MW-4, MW-5 and MW-6. MW-6 benzene concentration of 96 µg/L; dissolved iron concentration of 1.06 milligrams per liter (mg/L).
March 31 and April 1, 2010	Monitor Well Sampling	Groundwater samples collected from MW-5 and MW-6, MW-4 was dry. MW-6 benzene concentration of 480 µg/L; a sample for dissolved iron was not obtained
June 9, 2010	Monitor Well Sampling	Groundwater samples collected from MW-4, MW-5 and MW-6 as a continuation of semi-annual sampling event. MW-6 benzene concentration of 710 µg/L; dissolved

Table 2. Groundwater Elevation Summary (March 2004 - June 2010) - ConocoPhillips Company Nell Hall No. 1

Well ID	Date Installed	Total Depth (ft. below TOC)	Screen Interval (ft below TOC)	Elevation (ft. msl) (TOC)	Date Measured	Groundwater Level (ft below TOC)	Groundwater Elevation (ft amsl)
MW-1	Unknown	28.55	Unknown	5615.72	5/10/2005	Dry	NC
					10/20/2005	19.25	5596.47
					11/22/2005	24.15	5591.57
					5/17/2006	NM	NC
					11/15/2006	21.40	5594.32
					2/19/2007	Dry	NC
					5/14/2007	24.85	5590.87
					8/22/2007	24.61	5591.11
					11/6/2007	20.87	5594.85
					3/17/2008	Dry	NC
					10/22/2008	19.38	5596.34
					3/30/2009	28.25	5587.47
					9/30/2009	16.56	5599.16
					3/31/2010	Dry	NC
					6/9/2010	24.16	5591.56
MW-2	Unknown	27.32	Unknown	5614.94	5/10/2005	Dry	NC
					10/20/2005	18.81	5596.13
					11/22/2005	23.74	5591.20
					5/17/2006	22.06	5592.88
					11/15/2006	21.01	5593.93
					2/19/2007	Dry	NC
					5/14/2007	Dry	NC
					8/22/2007	18.03	5596.91
					11/6/2007	20.43	5594.51
					3/17/2008	Dry	NC
					10/22/2008	18.83	5596.11
					3/30/2009	27.15	5587.79
					9/30/2009	16.01	5598.93
					3/31/2010	Dry	NC
					6/9/2010	23.36	5591.58
MW-3	Unknown	27.45	Unknown	5615.53	5/10/2005	Dry	NC
					10/20/2005	19.36	5596.17
					11/22/2005	24.24	5591.29
					5/17/2006	22.82	5592.71
					11/15/2006	21.53	5594.00
					2/19/2007	Dry	NC
					5/14/2007	Dry	NC
					8/22/2007	18.36	5597.17
					11/6/2007	20.95	5594.58
					3/17/2008	Dry	NC
					10/22/2008	19.34	5596.19
					3/30/2009	Dry	NC
					9/30/2009	NM	NC
					3/31/2010	Dry	NC
					6/9/2010	23.87	5591.66
MW-4	2/18/2004	37.57	7.57 - 37.57	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	NC
					10/20/2005	18.87	5596.00
					11/22/2005	23.93	5590.94
					5/17/2006	NM	NC
					11/15/2006	21.02	5593.85
					2/19/2007	34.40	5580.47
					5/14/2007	27.56	5587.31
					8/22/2007	18.18	5596.69
					11/6/2007	20.48	5594.39
					3/17/2008	36.08	5578.79
					10/22/2008	18.96	5595.91
					3/30/2009	37.36	5577.51
					9/30/2009	16.15	5598.72
					3/31/2010	Dry	NC
					6/9/2010	23.61	5591.26

Table 2. Groundwater Elevation Summary (March 2004 - June 2010) - ConocoPhillips Company Nell Hall No. 1

Well ID	Date Installed	Total Depth (ft. below TOC)	Screen Interval (ft below TOC)	Elevation (ft. msl) (TOC)	Date Measured	Groundwater Level (ft below TOC)	Groundwater Elevation (ft amsl)
MW-5	2/17/2004	42.7	7.7 - 42.7	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
					10/20/2005	20.34	5595.52
					11/22/2005	25.23	5590.63
					5/17/2006	23.80	5592.06
					11/15/2006	22.51	5593.35
					2/19/2007	35.31	5580.55
					5/14/2007	27.59	5588.27
					8/22/2007	19.45	5596.41
					11/6/2007	21.94	5593.92
					3/17/2008	37.33	5578.53
					10/22/2008	19.3	5596.56
					3/30/2009	38.68	5577.18
					9/30/2009	17.54	5598.32
					3/31/2010	39.05	5576.81
					6/9/2010	24.91	5590.95
MW-6	2/18/2004	38.21	8.21 - 38.21	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	NC
					10/20/2005	19.94	5595.50
					11/22/2005	25.02	5590.42
					5/17/2006	NM	NC
					11/15/2006	21.12	5594.32
					2/19/2007	34.82	5580.62
					5/14/2007	26.12	5589.32
					8/22/2007	19.41	5596.03
					11/6/2007	21.51	5593.93
					3/17/2008	36.34	5579.10
					10/22/2008	19.99	5595.45
					3/30/2009	37.04	5578.40
					9/30/2009	17.26	5598.18
					3/31/2010	37.24	5578.20
					6/9/2010	24.43	5591.01

Explanation

amsl = Above mean sea level
bgs = Below ground surface
ft = Feet
NC = Not calculated
NM = Not measured
TOC = Top of casing

Table 3. Groundwater Analytical Results Summary (March 2004 - June 2010)
ConocoPhillips Company Nell Hall No. 1

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Ferrous Iron (mg/L)	Phosphate (mg/L)	Dissolved Iron (mg/L)
MW-4	3/8/2004	**13**	12	64	**1,400**	NA	NA	NA	NA	NA
	7/19/2004	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA
	10/27/2004	**11**	8	21	130	NA	NA	NA	NA	NA
	12/27/2004	<2.5	<2.5	<2.5	<0.5	NA	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	NA
	11/15/2006	<0.5	<0.7	<0.8	<0.8	<0.25	110	0.083	<0.25	NA
	2/21/2007	<0.5	<0.7	<0.8	<0.8	<0.25	59.6	1.6	0.28	NA
	8/22/2007	<0.5	<0.7	<0.8	<0.8	<0.25	96.5	0.04	<0.25	NA
	11/6/2007	<0.5	<0.7	<0.8	<0.8	3.3	111	<0.008	0.17	NA
	3/17/2008	<5	<5	<5	<5	<0.5	64.5	0.187	0.9	NA
	10/22/2008	<5	<5	<5	<5	1.9	93.8	<0.1	0.18	NA
	3/30/2009	Dry								
	9/30/2009	<1	<1	<1	<1	NA	NA	NA	NA	<0.02
	3/31/2010	Dry								
	6/9/2010	<1	<1	<1	<1	NA	NA	NA	NA	<0.02
MW-5	3/8/2004	1.1	<0.5	1	17	NA	NA	NA	NA	NA
	7/19/2004	<0.5	0.55	<0.5	0.72	NA	NA	NA	NA	NA
	10/27/2004	<0.5	<0.5	<0.5	<1.0	NA	NA	NA	NA	NA
	12/27/2004	<0.5	<0.5	<0.5	<1.0	NA	NA	NA	NA	NA
	5/11/2005	<0.5	<0.7	<0.8	<0.8	2.3	139	<0.0080	1.2	NA
	11/22/2005	<0.5	<0.7	<0.8	<0.8	<0.40	38	<0.0080	0.43	NA
	11/15/2006	<0.5	<0.7	<0.8	<0.8	2.3	77.9	<0.0080	<0.25	NA
	2/21/2007	<0.5	<0.7	<0.8	<0.8	1.3	83.3	<0.0080	0.28	NA
	8/22/2007	<0.5	<0.7	<0.8	<0.8	5.6	125	<0.0080	<0.25	NA
	11/6/2007	<0.5	<0.7	<0.8	<0.8	4	59	<0.0080	<0.25	NA
	3/17/2008	<5	<5	<5	<5	0.986	69.7	0.876	1.4	NA
	10/22/2008	<5	<5	<5	<5	0.532	105	<.1	<.15	NA
	3/30/2009	<5	<5	<5	<5	NA	NA	0.822	NA	NA
	9/30/2009	<1	<1	<1	<1	NA	NA	NA	NA	<0.02
	3/31/2010	<1	<1	<1	<1	NA	NA	NA	NA	<0.02
	6/9/2010	<1	<1	<1	<1	NA	NA	NA	NA	<0.02
MW-6	3/8/2004	**2,500**	14	**1,600**	**21,031**	NA	NA	NA	NA	NA
	7/19/2004	<0.5	<0.5	0.98	2.6	NA	NA	NA	NA	NA
	10/27/2004	0.4	0.3	0.5	2.1	NA	NA	NA	NA	NA
	12/27/2004	**45**	6.8	14	71.7	NA	NA	NA	NA	NA
	5/11/2005	Dry								
	11/22/2005	10	0.7	16	150	<0.40	3.4	7.7	2.8	NA
	11/15/2006	<0.5	<0.7	<0.8	<0.8	<0.25	41.3	0.19	<0.25	NA
	2/21/2007	**540**	<1	76	**810**	<0.25	1.8	6.4	9.0	NA
	8/22/2007	<0.5	<0.7	<0.8	<0.8	<0.25	12.6	0.95	<0.25	NA
	11/6/2007	**15**	<0.7	47	390	<0.25	5.6	3.6	0.1	NA
	3/18/2008	**160**	<5	<5	33	NA	NA	8.88	NA	NA
	10/22/2008	<5	<5	<5	<5	<1.0	5.15	38.7	0.9	NA
	3/30/2009	**42**	<5	<5	10	NA	NA	31.8	NA	NA
	9/30/2009	**96**	4.7	62	120	NA	NA	NA	NA	**1.06**
	4/1/2010	**480**	<1.0	78	200	NA	NA	NA	NA	NA
	6/9/2010	**710**	<1.0	420	520	NA	NA	NA	NA	**11.4**
NMWQCC Standards		**10 (µg/L)**	**750 (µg/L)**	**750 (µg/L)**	**620 (µg/L)**	**10 (mg/L)**	**600 (mg/L)**	**NE**	**NE**	**1 (mg/L)**

Explanation

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

APPENDIX A

GROUNDWATER SAMPLING FIELD FORMS

TETRA TECH, INC.

WATER SAMPLING FIELD FORM

Project Name Nell Hall No. 1 Page 1 of 3

Project No.

Site Location Flora Vista, NM

Site/Well No. MW-4 Coded/ Replicate No. — Date 3-31-10

Weather Cloudy, ~45° Time Sampling Began N/A Time Sampling Completed N/A

EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface ~3' MP Elevation 5614.87

Total Sounded Depth of Well Below MP 37.57 Water-Level Elevation dry

Held ____ Depth to Water Below MP 37.43

Wet ____ Water Column in Well dry

Diameter of Casing 2"

Gallons Pumped/Bailed Prior to Sampling dry

Gallons per Foot 0.16

Gallons in Well 0

Sampling Pump Intake Setting (feet below land surface) N/A

Purging Equipment ~~Purge pump~~ / Bailer dry

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm³)	TDS (g/L)	DO (mg/L)	ORP (mV)

Sampling Equipment Purge Pump/Bailer

Constituents Sampled	Container Description	Preservative
~~BTEX~~	3 40mL VOA's	HCl
~~Dissolved Fe~~	16 oz plastic	None

Remarks No sample collected. Well only has small amount of water in cap.

Sampling Personnel K. Blanchard, C. Mathews

Well Casing Volumes

Gal./ft.							
	1 ¼" = 0.077	2" = 0.16	3" = 0.37	4" = 0.65
	1 ½" = 0.10	2 ½" = 0.24	3" ½ = 0.50	6" = 1.46

TETRA TECH, INC.

WATER SAMPLING FIELD FORM

Project Name Nell Hall No. 1 Page 2 of 3

Project No.

Site Location Flora Vista, NM

Site/Well No. MW-5 Coded/ Replicate No. — Date 3/31/10

Weather Cloudy, 45° Time Sampling Began 1425 Time Sampling Completed 1445

EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface ~3' MP Elevation 5615.86

Total Sounded Depth of Well Below MP 42.7 Water-Level Elevation 5576.81

Held ____ Depth to Water Below MP 39.05 Diameter of Casing 2"

Wet ____ Water Column in Well 3.65 Gallons Pumped/Bailed Prior to Sampling 1.75

Gallons per Foot 0.16

Gallons in Well .584 x3 = 1.752 Sampling Pump Intake Setting (feet below land surface) N/A

Purging Equipment Purge pump / Bailer

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm³)	TDS (g/L)	DO (mg/L)	ORP (mV)

Not enough water

Sampling Equipment Purge Pump/Bailer

Constituents Sampled	Container Description	Preservative
BTEX	3 40mL VOA's	HCl
Dissolved Fe	16 oz plastic	None

Remarks Not enough water to collect parameters.

Sampling Personnel K. Blanchard, C. Mathews

Well Casing Volumes

Gal./ft.	1 ¼" = 0.077	2" = 0.16	3" = 0.37	4" = 0.65
	1 ½" = 0.10	2 ½" = 0.24	3" ½ = 0.50	6" = 1.46

TETRA TECH, INC.

WATER SAMPLING FIELD FORM

Project Name Nell Hall No. 1 Page 3 of 3

Project No.

Site Location Flora Vista, NM

Site/Well No. MW-6 Coded/ Replicate No. Date 3-31-10

Weather Cloudy, ~45° Time Sampling Began 3-31-10 @ 1400 Time Sampling Completed ~~3~~ 4-1-10 @ 1510

EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface ~3' MP Elevation 5615.44

Total Sounded Depth of Well Below MP 38.21 Water-Level Elevation 5578.20

Hold ____ Depth to Water Below MP 37.24 Diameter of Casing 2"

Wet ____ Water Column in Well 0.97 Gallons Pumped/Bailed Prior to Sampling ~0.25 then dry

Gallons per Foot 0.16

Gallons in Well 0.155 x 3 = 0.466 Sampling Pump Intake Setting (feet below land surface) N/A

Purging Equipment Purge pump / Bailer

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm³)	TDS (g/L)	DO (mg/L)	ORP (mV)

not enough water to collect parameters

Sampling Equipment Purge Pump/Bailer

Constituents Sampled	Container Description	Preservative
BTEX	3 40mL VOA's	HCl
~~Dissolved Fe~~	~~16 oz plastic~~	~~None~~ Not enough water in well to collect dissolved Fe sample

Remarks White particles in water, smells like sewage.

Sampling Personnel K. Blanchard, C. Mathews

Well Casing Volumes

Gal./ft.	1 ¼" = 0.077	2" = 0.16	3" = 0.37	4" = 0.65
	1 ½" = 0.10	2 ½" = 0.24	3" ½ = 0.50	6" = 1.46

WATER SAMPLING FIELD FORM

Project No. Nell Hall — 1 of 3

Location Flora Vista, NM

Site/Well No. MW- 4 — Coded/ Replicate No. — — Date 6-9-10

Weather Sunny, hot 99° — Time Sampling Began — Time Sampling Completed 1720

EVACUATION DATA

Description of Measuring Pt (MP) (TOC) Top of Casing

Height of MP Above/Below Land Surface ~3' — MP Elevation 5614.87

Total Sounded Depth of Well Below MP 37.76 — Water-Level Elevation 5591.26

Held ____ — Depth to Water Below MP 23.101 — Diameter of Casing (2 inch / 4 inch)

Wet ____ — Water Column in Well ~~14.15~~ 14.66 — Gallons Pumped/Bailed Prior to Sampling 7

Gallons per Foot 2.264

Gallons in Well 2.264 x 3 = 6.792 — Sampling Pump Intake (feet below land surface) ____

Purging Equipment bailer

SAMPLING DATA/FIELD PARAMETERS

Volume

Time	Temperature	pH	Conductivity	TDS	DO	DO%	ORP	Other
1715	16.13	6.93	0.921	—	2.50	23.8	-30.2	5.75
1716	15.81	6.33	0.921	—	1.45	14.9	-6.1	6.0
1716	15.67	5.71	0.918	—	1.48	15.0	19.9	6.75

Sampling Equipment Low Flow Pump / Disposable Bailer

Constituents Sampled	Container Description	Preservative
dissolved iron	1L or Plastic	Not Preserved Filtered @ lab prior to analysis
BTEX	3 VOA	HCl

Remarks

Sampling Personnel CM & CB

Well Casing Volumes

Gal./ft.							
	1 ¼" = 0.077	2" = 0.16	3" = 0.37	4" = 0.65
	1 ½" = 0.10	2 ½" = 0.24	3" ½ = 0.50	6" = 1.46

WATER SAMPLING FIELD FORM

Project No. Nell Hall

Location Flora Vista, NM

Site/Well No. MW- 5

Coded/ Replicate No. ______

Date 6-9-10

Weather Sunny, hot

Time Sampling Began ~~[illegible]~~ 1700

Time Sampling Completed 1730

EVACUATION DATA

Description of Measuring Pt (MP) Top of casing

Height of MP Above/Below Land Surface ______

MP Elevation 5615.86

Total Sounded Depth of Well Below MP 42.94

Water-Level Elevation 5590.95

Held ______

Depth to Water Below MP 24.91

Diameter of Casing (2 inch) / 4 inch

Wet ______

Water Column in Well ~~[illegible]~~ 18.03

Gallons Pumped/(Bailed) Prior to Sampling 8.75

Gallons per Foot .16

Gallons in Well 2.8848 = 8.65

Sampling Pump Intake (feet below land surface) —

Purging Equipment bailer

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature	pH	Conductivity (mS)	TDS	DO	DO%	ORP	Other (Gallons)
~~1724~~	~~15.38~~	~~6.82~~	~~.822~~	—				~~7.5~~
1725	15.64	6.38	.822	—	7.35	73.9	94.5	7.5
1727	14.97	6.35	.823	—	7.36	72.5	118.1	8.0
1729	14.81	6.05	.823	—	7.12	70.3	141.9	8.5

Sampling Equipment Low Flow Pump / Disposable (Bailer)

Constituents Sampled	Container Description	Preservative
dissolved iron	16 oz Plastic	Na - Filtered & Preserved
BTEX	VOA	HCl preserved @ lab

Remarks H_2O is clear, no odor or sheen observed

Sampling Personnel CM & CB

Well Casing Volumes

Gal./ft.				
	1 ¼" = 0.077	2" = 0.16	3" = 0.37	4" = 0.65
	1 ½" = 0.10	2 ½" = 0.24	3" ½ = 0.50	6" = 1.46

WATER SAMPLING FIELD FORM

Project No. Nell Hall — 3 of 3

Location Flora Vista, NM

Site/Well No. MW-10 — Coded/ Replicate No. 1805 — Date 6-9-10

Weather Sunny, hot 99° — Time Sampling Began — Time Sampling Completed 1800

EVACUATION DATA

Description of Measuring Pt (MP) Top of Casing

Height of MP Above/Below Land Surface 0 — MP Elevation 5615.44

Total Sounded Depth of Well Below MP 39.45 — Water-Level Elevation 5591.01

Held ____ — Depth to Water Below MP 24.43 — Diameter of Casing 2 inch / 4 inch

Wet ____ — Water Column in Well 14.02 — Gallons Pumped/Bailed Prior to Sampling

Gallons per Foot .16

Gallons in Well 2.24 x 3 = 6.72 — Sampling Pump Intake (feet below land surface)

Purging Equipment bailer

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature	pH	Conductivity	TDS	DO	DO%	ORP	Other
1756	15.49	6.91	1.139		1.66	16.5	-44.4	~~5.5~~
1758	15.50	6.71	1.132		1.22	12.2	-39.1	6.0
1759	15.46	6.59	1.125		1.09	10.7	-35.6	6.5

Sampling Equipment — Low Flow Pump / Disposable Bailer

Constituents Sampled	Container Description	Preservative
dissolve iron	1 L or plastic	None - Filtered & Preserved @ lab prior to analysis
BTEX	VOA	HCl

Remarks

Sampling Personnel CM & CB

Well Casing Volumes

Gal./ft.							
	1 ¼" = 0.077	2" = 0.16	3" = 0.37	4" = 0.65
	1 ½" = 0.10	2 ½" = 0.24	3" ½ = 0.50	6" = 1.46

APPENDIX B

LABORATORY ANALYTICAL REPORTS

SPL Inc.
8880 Interchange Drive
Houston, TX 77054
Phone: (713) 660-0901
Fax: (713) 660-8975

Certificate of Analysis

April 15, 2010

Workorder: H10040050

Kelly Blanchard
Tetra Tech
6121 Indian School Road NE
Suite 200
Albuquerque, NM 87110

Project: Nell Hall No 1

Project Number: Nell Hall No 1

Site: Flora Vista, NM

PO Number: ENFOS #4513176413

NELAC Cert. No.: T104704205-09-1

This Report Contains A Total Of 15 Pages

Excluding Any Attachments

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Certificate of Analysis

April 15, 2010

Workorder: H10040050

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Tetra Tech
6121 Indian School Road NE
Suite 200
Albuquerque, NM 87110

Project: Nell Hall No 1

Project Number: Nell Hall No 1

Site: Flora Vista, NM

PO Number: ENFOS #4513176413

NELAC Cert. No.: T104704205-09-1

I. SAMPLE RECEIPT:

All samples were received intact. The internal ice chest temperatures were measured on receipt and are recorded on the attached Sample Receipt Checklist.

II: ANALYSES AND EXCEPTIONS:

There were no exceptions noted.

III. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

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Certificate of Analysis

April 15, 2010

Workorder: H10040050

Kelly Blanchard
Tetra Tech
6121 Indian School Road NE
Suite 200
Albuquerque, NM 87110

Project: Nell Hall No 1

Project Number: Nell Hall No 1

Site: Flora Vista, NM

PO Number: ENFOS #4513176413

NELAC Cert. No.: T104704205-09-1

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or by his designee, as verified by the following signature.

Erica Cardenas, Senior Project Manager

Enclosures

SPL Inc.
8880 Interchange Drive
Houston, TX 77054
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Fax: (713) 660-8975

SAMPLE SUMMARY

Workorder: H10040050 : Nell Hall No 1 | Project Number: Nell Hall No 1

Lab ID	Sample ID	Matrix	COC ID	Date/Time Collected	Date/Time Received
H10040050001	MW-5	Water		3/31/2010 14:40	4/2/2010 09:15
H10040050002	MW-6	Water		4/1/2010 15:10	4/2/2010 09:15
H10040050003	Trip Blank	Water		4/1/2010 15:20	4/2/2010 09:15

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ANALYTICAL RESULTS

Workorder: H10040050 : Nell Hall No 1 | Project Number: Nell Hall No 1

Lab ID: **H10040050001** | Date/Time Received: 4/2/2010 09:15 | Matrix: Water

Sample ID: **MW-5** | Date/Time Collected: 3/31/2010 14:40

ICP DISSOLVED METALS

Analysis Desc: SW-846 6010B | Preparation Batches: Batch: 1638 SW-846 3010A on 04/05/2010 17:00 by R_V | Analytical Batches: Batch: 1334 SW-846 6010B on 04/11/2010 16:51 by EBG

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Iron	ND		0.0200	0.00640	1		1638	1334

VOLATILES

Analysis Desc: SW-846 8260B | SW-846 5030Analytical Batches: Batch: 1715 SW-846 8260B on 04/07/2010 16:51 by JMC

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	ND		1.0	0.10	1			1715
Ethylbenzene	ND		1.0	0.15	1			1715
Toluene	ND		1.0	0.29	1			1715
m,p-Xylene	ND		1.0	0.18	1			1715
o-Xylene	ND		1.0	0.13	1			1715
Xylenes, Total	ND		1.0	0.13	1			1715
4-Bromofluorobenzene (S)	91.7 %		74-125		1			1715
1,2-Dichloroethane-d4 (S)	94.4 %		70-130		1			1715
Toluene-d8 (S)	98.7 %		82-118		1			1715

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ANALYTICAL RESULTS

Workorder: H10040050 : Nell Hall No 1 | Project Number: Nell Hall No 1

Lab ID: **H10040050002** | Date/Time Received: 4/2/2010 09:15 | Matrix: Water

Sample ID: **MW-6** | Date/Time Collected: 4/1/2010 15:10

VOLATILES

Analysis Desc: SW-846 8260B | SW-846 5030Analytical Batches:

Batch: 1715 SW-846 8260B on 04/07/2010 17:19 by JMC DF = 1.

Batch: 1733 SW-846 8260B on 04/11/2010 21:28 by JMC DF = 5.

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	480		5.0	0.50	5			1733
Ethylbenzene	78		1.0	0.15	1			1715
Toluene	ND		1.0	0.29	1			1715
m,p-Xylene	200		1.0	0.18	1			1715
o-Xylene	ND		1.0	0.13	1			1715
Xylenes, Total	200		1.0	0.13	1			1715
4-Bromofluorobenzene (S)	93 %		74-125		5			1733
4-Bromofluorobenzene (S)	101 %		74-125		1			1715
1,2-Dichloroethane-d4 (S)	85.7 %		70-130		1			1715
1,2-Dichloroethane-d4 (S)	97.4 %		70-130		5			1733
Toluene-d8 (S)	98.7 %		82-118		5			1733
Toluene-d8 (S)	99.3 %		82-118		1			1715

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ANALYTICAL RESULTS

Workorder: H10040050 : Nell Hall No 1 | Project Number: Nell Hall No 1

Lab ID: **H10040050003** | Date/Time Received: 4/2/2010 09:15 | Matrix: Water

Sample ID: **Trip Blank** | Date/Time Collected: 4/1/2010 15:20

VOLATILES

Analysis Desc: SW-846 8260B | SW-846 5030Analytical Batches:

Batch: 1715 SW-846 8260B on 04/07/2010 17:47 by JMC

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	ND		1.0	0.10	1			1715
Ethylbenzene	ND		1.0	0.15	1			1715
Toluene	ND		1.0	0.29	1			1715
m,p-Xylene	ND		1.0	0.18	1			1715
o-Xylene	ND		1.0	0.13	1			1715
Xylenes, Total	ND		1.0	0.13	1			1715
4-Bromofluorobenzene (S)	99.7 %		74-125		1			1715
1,2-Dichloroethane-d4 (S)	95.7 %		70-130		1			1715
Toluene-d8 (S)	99.1 %		82-118		1			1715

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QUALITY CONTROL DATA

Workorder: H10040050 : Nell Hall No 1 — Project Number: Nell Hall No 1

QC Batch: DIGM/1638 — Analysis Method: SW-846 6010B

QC Batch Method: SW-846 3010A — Preparation: 04/05/2010 17:00 by R_V

Associated Lab Samples: H10040019001, H10040019002, H10040019003, H10040019004, H10040021001, H10040021002, H10040021003, H10040021004, H10040025001, H10040025002, H10040025003, H10040049001, H10040049002, H10040049003, H10040049004, H10040050001, H10040051001, H10040051002, H10040051003, H10040051004

METHOD BLANK: 37509

Analysis Date/Time Analyst: 04/11/2010 13:44 EBG

Parameter	Units	Blank Result	Qualifiers	Reporting Limit
Iron	mg/l	ND		0.0200

LABORATORY CONTROL SAMPLE: 37510

Analysis Date/Time Analyst: 04/11/2010 13:49 EBG

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits
Iron	mg/l	1.0	1.02	102	80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 37507 37508 Original: H10040025002

MS Analysis Date/Time Analyst: 04/11/2010 14:00 EBG

MSD Analysis Date/Time Analyst: 04/11/2010 14:06 EBG

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Iron	mg/l	0.0072	1.0	1.091	1.003	109	100	75-125	8.4	20

QC results presented in the QC Control Data have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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QUALITY CONTROL DATA

Workorder: H10040050 : Nell Hall No 1 Project Number: Nell Hall No 1

QC Batch: MSV/1714 Analysis Method: SW-846 8260B

QC Batch Method: SW-846 5030 Preparation: 04/07/2010 00:00 by JMC

Associated Lab Samples: H10040014001 H10040014002 H10040014005 H10040014006 H10040050001 H10040050002 H10040050003 H10040051001 H10040051002 H10040051003 H10040051004 H10040051005 H10040051006 H10040057016 H10040057017 H10040057018

METHOD BLANK: 38036

Analysis Date/Time Analyst: 04/07/2010 10:50 JMC

Parameter	Units	Blank Result	Qualifiers	Reporting Limit
Benzene	ug/l	ND		1.0
Ethylbenzene	ug/l	ND		1.0
Toluene	ug/l	ND		1.0
m,p-Xylene	ug/l	ND		1.0
o-Xylene	ug/l	ND		1.0
Xylenes, Total	ug/l	ND		1.0
4-Bromofluorobenzene (S)	%	94.9		74-125
1,2-Dichloroethane-d4 (S)	%	96.8		70-130
Toluene-d8 (S)	%	99.8		82-118

LABORATORY CONTROL SAMPLE: 38037

Analysis Date/Time Analyst: 04/07/2010 10:23 JMC

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits
Benzene	ug/l	20	19.7	98.5	74-123
Ethylbenzene	ug/l	20	20.0	100	72-127
Toluene	ug/l	20	19.2	96.1	74-126
m,p-Xylene	ug/l	40	40.2	100	71-129
o-Xylene	ug/l	20	20.0	100	74-130
Xylenes, Total	ug/l	60	60.19	100	71-130
4-Bromofluorobenzene (S)	%			100	74-125
1,2-Dichloroethane-d4 (S)	%			93.8	70-130
Toluene-d8 (S)	%			100	82-118

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 38042 38043 Original: H10040014002

MS Analysis Date/Time Analyst: 04/07/2010 11:46 JMC

MSD Analysis Date/Time Analyst: 04/07/2010 12:13 JMC

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Benzene	ug/l	ND	20	20.4	20.4	102	102	70-124	0.1	20
Ethylbenzene	ug/l	ND	20	20.4	19.7	102	98.3	35-175	3.9	20

QC results presented in the QC Control Data have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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QUALITY CONTROL DATA

Workorder: H10040050 : Nell Hall No 1 Project Number: Nell Hall No 1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 38042 38043 Original: H10040014002

MS Analysis Date/Time Analyst: 04/07/2010 11:46 JMC

MSD Analysis Date/Time Analyst: 04/07/2010 12:13 JMC

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Toluene	ug/l	ND	20	20.6	20.3	103	101	70-131	1.4	20
m,p-Xylene	ug/l	ND	40	41.9	40.0	105	99.9	35-175	4.7	20
o-Xylene	ug/l	ND	20	21.4	19.8	107	98.8	35-175	8.0	20
Xylenes, Total	ug/l	ND	60	63.3	59.75	106	99.6	35-175	5.8	20
4-Bromofluorobenzene (S)	%	92.8				103	95.5	74-125		30
1,2-Dichloroethane-d4 (S)	%	97.3				96.1	97.2	70-130		30
Toluene-d8 (S)	%	98				100	99.9	82-118		30

QC results presented in the QC Control Data have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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QUALITY CONTROL DATA

Workorder: H10040050 : Nell Hall No 1 Project Number: Nell Hall No 1

QC Batch: MSV/1732 Analysis Method: SW-846 8260B

QC Batch Method: SW-846 5030 Preparation: 04/11/2010 00:00 by JMC

Associated Lab Samples: H10040050002 H10040051002 H10040051003 H10040051005 H10040157001 H10040157002 H10040157003 H10040157004 H10040163001 H10040163002 H10040163003

METHOD BLANK: 38623

Analysis Date/Time Analyst: 04/11/2010 15:30 JMC

Parameter	Units	Blank Result	Qualifiers	Reporting Limit
Benzene	ug/l	ND		1.0
4-Bromofluorobenzene (S)	%	89.9		74-125
1,2-Dichloroethane-d4 (S)	%	98.5		70-130
Toluene-d8 (S)	%	102		82-118

LABORATORY CONTROL SAMPLE: 38624

Analysis Date/Time Analyst: 04/11/2010 15:03 JMC

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits
Benzene	ug/l	20	20.2	101	74-123
4-Bromofluorobenzene (S)	%			95.1	74-125
1,2-Dichloroethane-d4 (S)	%			91.6	70-130
Toluene-d8 (S)	%			99.9	82-118

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 38625 38626 Original: H10040157001

MS Analysis Date/Time Analyst: 04/11/2010 18:43 JMC

MSD Analysis Date/Time Analyst: 04/11/2010 19:10 JMC

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Benzene	ug/l	ND	20	19.6	18.2	98.1	91.1	70-124	7.4	20
4-Bromofluorobenzene (S)	%	94.4				95.2	96.1	74-125		30
1,2-Dichloroethane-d4 (S)	%	103				92.7	93.0	70-130		30
Toluene-d8 (S)	%	98.5				98.9	99.4	82-118		30

QC results presented in the QC Control Data have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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Legend

(S) - Indicates analyte is a surrogate

Qualifier	Qualifier Description
MI	Matrix Interference
I	Estimated value, between MDL and PQL (Florida)
JN	The analysis indicates the presence of an analyte
C	MTBE results were not confirmed by GCMS
NC	Not Calculated - Sample concentration > 4 times the spike
*	Recovery/RPD value outside QC limits
E	Results exceed calibration range
H	Exceeds holding time
J	Estimated value
Q	Received past holding time
B	Analyte detected in the Method Blank
N	Recovery outside of control limits
D	Recovery out of range due to dilution
NC	Not Calculable (Sample Duplicate)
P	Pesticide dual column results, greater then 25%

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: H10040050 : Nell Hall No 1 Project Number: Nell Hall No 1

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
H10040050001	**MW-5**	SW-846 3010A	DIGM/1638	SW-846 6010B	ICP/1334
H10040050001	**MW-5**	SW-846 5030	MSV/1714	SW-846 8260B	MSV/1715
H10040050002	**MW-6**	SW-846 5030	MSV/1714	SW-846 8260B	MSV/1715
H10040050003	**Trip Blank**	SW-846 5030	MSV/1714	SW-846 8260B	MSV/1715
H10040050002	**MW-6**	SW-846 5030	MSV/1732	SW-846 8260B	MSV/1733

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Sample Receipt Checklist

WorkOrder:	H10040050	Received By	LOG
Date and Time	04/02/2010 09:15	Carrier Name:	FEDEXS
Temperature:	2.3°C	Chilled By:	Water Ice

1.	Shipping container/cooler in good condition?	YES
2.	Custody seals intact on shipping container/cooler?	YES
3.	Custody seals intact on sample bottles?	Not Present
4.	Chain of custody present?	YES
5.	Chain of custody signed when relinquished and received?	YES
6.	Chain of custody agrees with sample labels?	YES
7.	Samples in proper container/bottle?	YES
8.	Samples containers intact?	YES
9.	Sufficient sample volume for indicated test?	YES
10.	All samples received within holding time?	YES
11.	Container/Temp Blank temperature in compliance?	YES
12.	Water - VOA vials have zero headspace?	YES
13.	Water - Preservation checked upon receipt(except VOA*)?	Not Applicable

*VOA Preservation Checked After Sample Analysis

SPL Representative: Contact Date & Time:

Client Name Contacted:

Client Instructions:

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SPL, Inc.

Analysis Request & Chain of Custody Record

H10040050

29042

1 of 1

Client Name:	TetraTech / ConocoPhillips
Address:	6121 Indian School Rd #200
City	Albuquerque State NM Zip 87110
Phone/Fax:	505-237-8440
Client Contact:	Kelly Blanchard Email: kelly.blanchard@tetratech.com
Project Name/No.:	Nell Hall No. 1
Site Name:	
Site Location:	Flora Vista, NM
Invoice To:	Conoco #45B176413 Ph:

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil A=air SL=sludge E=encore X=other)	bottle (P=plastic A=amber glass G=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HCl 2=HNO3 3=H2SO4 X=other)	Number of Containers	Requested Analysis: BTEX	Requested Analysis: Dissolved Fe
MW-5	3-31-10	1440		X	W	V	40	1	3	X	
MW-5	3-31-10	1440		X	W	P	16	Ø	1		X
MW-6	4-1-10	1510		X	W	V	40	1	1	X	
Trip Blank	4-1-10	1520			W	V	40	1	2	X	

Client/Consultant Remarks:

Laboratory remarks:

Intact? ☐ Y ☐ N
Ice? ☐ Y ☐ N
Temp: 2.3c

Requested TAT

- ☐ 1 Business Day ☐ Contract
- ☐ 2 Business Days ☒ Standard
- ☐ 3 Business Days
- ☐ Other _____

Rush TAT requires prior notice

Special Reporting Requirements Results: Fax ☐ Email ☒ PDF ☒

Standard QC ☒ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (Initial):

1. Relinquished by Sampler:	date 4-1-10	time 1600	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	date 4/2/10	time 0915	6. Received by Laboratory:

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☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

Report ID: H10040050_6089
Printed: 04/15/2010 18:58

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Certificate of Analysis

June 25, 2010

Workorder: H10060284

Cassandre Brown
Tetra Tech, Inc.
6121 Indian School Road NE
Suite 200
Albuquerque, NM 87110

Project: Nell Hall No. 1

Project Number: Nell Hall No. 1

Site: Flora Vista, NM

PO Number: ENFOS

NELAC Cert. No.: T104704205-09-1

This Report Contains A Total Of 17 Pages

Excluding Any Attachments

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Certificate of Analysis

June 25, 2010

Workorder: H10060284

Cassandre Brown
Tetra Tech, Inc.
6121 Indian School Road NE
Suite 200
Albuquerque, NM 87110

Project: Nell Hall No. 1

Project Number: Nell Hall No. 1

Site: Flora Vista, NM

PO Number: ENFOS

NELAC Cert. No.: T104704205-09-1

I. SAMPLE RECEIPT:

All samples were received intact. The internal ice chest temperatures were measured on receipt and are recorded on the attached Sample Receipt Checklist.

II: ANALYSES AND EXCEPTIONS:

Per the Conoco Phillips TSM Revision 0, a copy of the internal chain of custody is to be included in final data package. However, due to LIMS limitations, this cannot be provided at this time.

There were no exceptions noted.

III. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

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Certificate of Analysis

June 25, 2010

Workorder: H10060284

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Tetra Tech, Inc.
6121 Indian School Road NE
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Project: Nell Hall No. 1

Project Number: Nell Hall No. 1

Site: Flora Vista, NM

PO Number: ENFOS

NELAC Cert. No.: T104704205-09-1

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or by his designee, as verified by the following signature.

Erica Cardenas, Senior Project Manager

Enclosures

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SAMPLE SUMMARY

Workorder: H10060284 : Nell Hall No. 1 Project Number: Nell Hall No. 1

Lab ID	Sample ID	Matrix	COC ID	Date/Time Collected	Date/Time Received
H10060284001	MW-4	Water		6/9/2010 17:20	6/11/2010 09:15
H10060284002	MW-5	Water		6/9/2010 17:30	6/11/2010 09:15
H10060284003	MW-6	Water		6/9/2010 18:00	6/11/2010 09:15
H10060284004	Duplicate	Water		6/9/2010 18:05	6/11/2010 09:15
H10060284005	Trip Blank	Water		6/10/2010 18:20	6/11/2010 09:15

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ANALYTICAL RESULTS

Workorder: H10060284 : Nell Hall No. 1 | Project Number: Nell Hall No. 1

Lab ID: **H10060284001** | Date/Time Received: 6/11/2010 09:15 | Matrix: Water

Sample ID: **MW-4** | Date/Time Collected: 6/9/2010 17:20

ICP DISSOLVED METALS

Analysis Desc: SW-846 6010B | Preparation Batches: Batch: 1822 SW-846 3010A on 06/11/2010 13:30 by R_V | Analytical Batches: Batch: 1461 SW-846 6010B on 06/21/2010 17:47 by EBG

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Iron	ND		0.0200	0.00640	1		1822	1461

VOLATILES

Analysis Desc: SW-846 8260B | SW-846 5030Analytical Batches: Batch: 2055 SW-846 8260B on 06/17/2010 23:43 by JMC

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	ND		1.0	0.10	1			2055
Ethylbenzene	ND		1.0	0.15	1			2055
Toluene	ND		1.0	0.29	1			2055
m,p-Xylene	ND		1.0	0.18	1			2055
o-Xylene	ND		1.0	0.13	1			2055
Xylenes, Total	ND		1.0	0.13	1			2055
4-Bromofluorobenzene (S)	88.2 %		74-125		1			2055
1,2-Dichloroethane-d4 (S)	87.6 %		70-130		1			2055
Toluene-d8 (S)	105 %		82-118		1			2055

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ANALYTICAL RESULTS

Workorder: H10060284 : Nell Hall No. 1 | Project Number: Nell Hall No. 1

Lab ID: **H10060284002** | Date/Time Received: 6/11/2010 09:15 | Matrix: Water

Sample ID: **MW-5** | Date/Time Collected: 6/9/2010 17:30

ICP DISSOLVED METALS

Analysis Desc: SW-846 6010B | Preparation Batches: Batch: 1822 SW-846 3010A on 06/11/2010 13:30 by R_V | Analytical Batches: Batch: 1461 SW-846 6010B on 06/21/2010 17:53 by EBG

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Iron	ND		0.0200	0.00640	1		1822	1461

VOLATILES

Analysis Desc: SW-846 8260B | SW-846 5030Analytical Batches: Batch: 2055 SW-846 8260B on 06/18/2010 00:10 by JMC

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	ND		1.0	0.10	1			2055
Ethylbenzene	ND		1.0	0.15	1			2055
Toluene	ND		1.0	0.29	1			2055
m,p-Xylene	ND		1.0	0.18	1			2055
o-Xylene	ND		1.0	0.13	1			2055
Xylenes, Total	ND		1.0	0.13	1			2055
4-Bromofluorobenzene (S)	89 %		74-125		1			2055
1,2-Dichloroethane-d4 (S)	84.3 %		70-130		1			2055
Toluene-d8 (S)	102 %		82-118		1			2055

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ANALYTICAL RESULTS

Workorder: H10060284 : Nell Hall No. 1 | Project Number: Nell Hall No. 1

Lab ID: **H10060284003** | Date/Time Received: 6/11/2010 09:15 | Matrix: Water

Sample ID: **MW-6** | Date/Time Collected: 6/9/2010 18:00

ICP DISSOLVED METALS

Analysis Desc: SW-846 6010B | Preparation Batches: Batch: 1822 SW-846 3010A on 06/11/2010 13:30 by R_V | Analytical Batches: Batch: 1461 SW-846 6010B on 06/21/2010 17:59 by EBG

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Iron	11.4		0.0200	0.00640	1		1822	1461

VOLATILES

Analysis Desc: SW-846 8260B | SW-846 5030Analytical Batches: Batch: 2055 SW-846 8260B on 06/18/2010 00:38 by JMC DF = 1. Batch: 2057 SW-846 8260B on 06/18/2010 12:39 by JMC DF = 50.

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	710		50	5.0	50			2057
Ethylbenzene	420		50	7.6	50			2057
Toluene	ND		1.0	0.29	1			2055
m,p-Xylene	520		50	9.2	50			2057
o-Xylene	ND		1.0	0.13	1			2055
Xylenes, Total	520		1.0	0.13	50			2057
4-Bromofluorobenzene (S)	95.3 %		74-125		50			2057
4-Bromofluorobenzene (S)	95.8 %		74-125		1			2055
1,2-Dichloroethane-d4 (S)	78.7 %		70-130		1			2055
1,2-Dichloroethane-d4 (S)	84.9 %		70-130		50			2057
Toluene-d8 (S)	100 %		82-118		50			2057
Toluene-d8 (S)	105 %		82-118		1			2055

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ANALYTICAL RESULTS

Workorder: H10060284 : Nell Hall No. 1 | Project Number: Nell Hall No. 1

Lab ID: **H10060284004** | Date/Time Received: 6/11/2010 09:15 | Matrix: Water

Sample ID: **Duplicate** | Date/Time Collected: 6/9/2010 18:05

VOLATILES

Analysis Desc: SW-846 8260B | SW-846 5030Analytical Batches:

Batch: 2055 SW-846 8260B on 06/18/2010 01:05 by JMC DF = 1

Batch: 2057 SW-846 8260B on 06/18/2010 13:07 by JMC DF = 50

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	780		50	5.0	50			2057
Ethylbenzene	440		50	7.6	50			2057
Toluene	ND		1.0	0.29	1			2055
m,p-Xylene	570		50	9.2	50			2057
o-Xylene	ND		1.0	0.13	1			2055
Xylenes, Total	570		1.0	0.13	50			2057
4-Bromofluorobenzene (S)	96 %		74-125		1			2055
4-Bromofluorobenzene (S)	96.7 %		74-125		50			2057
1,2-Dichloroethane-d4 (S)	76.7 %		70-130		1			2055
1,2-Dichloroethane-d4 (S)	86.4 %		70-130		50			2057
Toluene-d8 (S)	101 %		82-118		50			2057
Toluene-d8 (S)	106 %		82-118		1			2055

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ANALYTICAL RESULTS

Workorder: H10060284 : Nell Hall No. 1 | Project Number: Nell Hall No. 1

Lab ID: **H10060284005** | Date/Time Received: 6/11/2010 09:15 | Matrix: Water

Sample ID: **Trip Blank** | Date/Time Collected: 6/10/2010 18:20

VOLATILES

Analysis Desc: SW-846 8260B | SW-846 5030Analytical Batches:

Batch: 2055 SW-846 8260B on 06/18/2010 01:33 by JMC

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	ND		1.0	0.10	1			2055
Ethylbenzene	ND		1.0	0.15	1			2055
Toluene	ND		1.0	0.29	1			2055
m,p-Xylene	ND		1.0	0.18	1			2055
o-Xylene	ND		1.0	0.13	1			2055
Xylenes, Total	ND		1.0	0.13	1			2055
4-Bromofluorobenzene (S)	98.5 %		74-125		1			2055
1,2-Dichloroethane-d4 (S)	83.8 %		70-130		1			2055
Toluene-d8 (S)	102 %		82-118		1			2055

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QUALITY CONTROL DATA

Workorder: H10060284 : Nell Hall No. 1 — Project Number: Nell Hall No. 1

QC Batch: DIGM/1822 — Analysis Method: SW-846 6010B

QC Batch Method: SW-846 3010A — Preparation: 06/11/2010 13:30 by R_V

Associated Lab Samples: H10060283001, H10060283002, H10060283003, H10060283004, H10060284001, H10060284002, H10060284003, H10060286001, H10060286002, H10060286003, H10060286006

METHOD BLANK: 50489

Analysis Date/Time Analyst: 06/21/2010 16:22 EBG

Parameter	Units	Blank Result	Qualifiers	Reporting Limit
Iron	mg/l	ND		0.0200

LABORATORY CONTROL SAMPLE: 50490

Analysis Date/Time Analyst: 06/21/2010 16:28 EBG

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits
Iron	mg/l	1.0	0.9602	96.0	80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 50491 50492 Original: H10060283004

MS Analysis Date/Time Analyst: 06/21/2010 16:40 EBG

MSD Analysis Date/Time Analyst: 06/21/2010 16:46 EBG

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Iron	mg/l	1.34	1.0	2.20	2.222	86.1	88.3	75-125	1.0	20

QC results presented in the QC Control Data have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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QUALITY CONTROL DATA

Workorder: H10060284 : Nell Hall No. 1 — Project Number: Nell Hall No. 1

QC Batch: MSV/2054 — Analysis Method: SW-846 8260B

QC Batch Method: SW-846 5030 — Preparation: 06/17/2010 00:00 by JMC

Associated Lab Samples: H10060284001 H10060284002 H10060284003 H10060284004 H10060284005 H10060286001 H10060286002 H10060286003 H10060286004

METHOD BLANK: 51692

Analysis Date/Time Analyst: 06/17/2010 18:07 JMC

Parameter	Units	Blank Result	Qualifiers	Reporting Limit
Benzene	ug/l	ND		1.0
Ethylbenzene	ug/l	ND		1.0
Toluene	ug/l	ND		1.0
m,p-Xylene	ug/l	ND		1.0
o-Xylene	ug/l	ND		1.0
Xylenes, Total	ug/l	ND		1.0
4-Bromofluorobenzene (S)	%	89.9		74-125
1,2-Dichloroethane-d4 (S)	%	84.5		70-130
Toluene-d8 (S)	%	103		82-118

LABORATORY CONTROL SAMPLE: 51693

Analysis Date/Time Analyst: 06/17/2010 17:39 JMC

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits
Benzene	ug/l	20	17.1	85.3	74-123
Ethylbenzene	ug/l	20	20.6	103	72-127
Toluene	ug/l	20	22.6	113	74-126
m,p-Xylene	ug/l	40	41.5	104	71-129
o-Xylene	ug/l	20	21.2	106	74-130
Xylenes, Total	ug/l	60	62.76	105	71-130
4-Bromofluorobenzene (S)	%			99.4	74-125
1,2-Dichloroethane-d4 (S)	%			81.7	70-130
Toluene-d8 (S)	%			105	82-118

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 51694 51695 Original: H10060398003

MS Analysis Date/Time Analyst: 06/17/2010 21:23 JMC

MSD Analysis Date/Time Analyst: 06/17/2010 21:51 JMC

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Benzene	ug/l	1	20	17.3	17.3	86.3	86.4	70-124	0.1	20
Ethylbenzene	ug/l	1	20	20.5	20.1	102	101	35-175	1.6	20
Toluene	ug/l	1	20	22.3	22.6	112	113	70-131	1.3	20

QC results presented in the QC Control Data have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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QUALITY CONTROL DATA

Workorder: H10060284 : Nell Hall No. 1 Project Number: Nell Hall No. 1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 51694 51695 Original: H10060398003

MS Analysis Date/Time Analyst: 06/17/2010 21:23 JMC

MSD Analysis Date/Time Analyst: 06/17/2010 21:51 JMC

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
m,p-Xylene	ug/l	1	40	41.7	40.8	104	102	35-175	2.2	20
o-Xylene	ug/l	1	20	21.0	20.8	105	104	35-175	0.6	20
Xylenes, Total	ug/l	1	60	62.69	61.65	104	103	35-175	1.7	20
4-Bromofluorobenzene (S)	%	ND				99.8	99.7	74-125		30
1,2-Dichloroethane-d4 (S)	%	ND				82.9	81.4	70-130		30
Toluene-d8 (S)	%	ND				105	105	82-118		30

QC results presented in the QC Control Data have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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QUALITY CONTROL DATA

Workorder: H10060284 : Nell Hall No. 1 — Project Number: Nell Hall No. 1

QC Batch: MSV/2056 — Analysis Method: SW-846 8260B

QC Batch Method: SW-846 5030 — Preparation: 06/18/2010 00:00 by JMC

Associated Lab Samples: H10060283001, H10060283002, H10060283003, H10060283004, H10060283005, H10060284003, H10060284004, H10060286005, H10060286006, H10060430001

METHOD BLANK: 51942

Analysis Date/Time Analyst: 06/18/2010 11:15 JMC

Parameter	Units	Blank Result	Qualifiers	Reporting Limit
Benzene	ug/l	ND		1.0
Ethylbenzene	ug/l	ND		1.0
m,p-Xylene	ug/l	ND		1.0
Xylenes, Total	ug/l	ND		1.0
4-Bromofluorobenzene (S)	%	90.6		74-125
1,2-Dichloroethane-d4 (S)	%	83.1		70-130
Toluene-d8 (S)	%	103		82-118

LABORATORY CONTROL SAMPLE: 51943

Analysis Date/Time Analyst: 06/18/2010 10:48 JMC

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits
Benzene	ug/l	20	16.7	83.6	74-123
Ethylbenzene	ug/l	20	20.1	101	72-127
m,p-Xylene	ug/l	40	40.4	101	71-129
Xylenes, Total	ug/l	60	61.34	102	71-130
4-Bromofluorobenzene (S)	%			98.1	74-125
1,2-Dichloroethane-d4 (S)	%			81.3	70-130
Toluene-d8 (S)	%			103	82-118

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 51944 51945 Original: H10060283005

MS Analysis Date/Time Analyst: 06/18/2010 15:52 JMC

MSD Analysis Date/Time Analyst: 06/18/2010 16:20 JMC

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Benzene	ug/l	ND	20	17.3	16.6	86.3	82.8	70-124	4.1	20
Ethylbenzene	ug/l	ND	20	19.6	19.5	97.9	97.7	35-175	0.3	20
m,p-Xylene	ug/l	ND	40	39.3	39.4	98.2	98.6	35-175	0.3	20
Xylenes, Total	ug/l	ND	60	59.42	59.19	99.0	98.6	35-175	0.4	20
4-Bromofluorobenzene (S)	%	92.6				97.8	96.5	74-125		30
1,2-Dichloroethane-d4 (S)	%	85.8				81.1	82.2	70-130		30
Toluene-d8 (S)	%	102				103	103	82-118		30

QC results presented in the QC Control Data have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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Legend

(S) - Indicates analyte is a surrogate

Qualifier	Qualifier Description
MI	Matrix Interference
I	Estimated value, between MDL and PQL (Florida)
JN	The analysis indicates the presence of an analyte
C	MTBE results were not confirmed by GCMS
NC	Not Calculated - Sample concentration > 4 times the spike
*	Recovery/RPD value outside QC limits
E	Results exceed calibration range
H	Exceeds holding time
J	Estimated value
Q	Received past holding time
B	Analyte detected in the Method Blank
N	Recovery outside of control limits
D	Recovery out of range due to dilution
NC	Not Calculable (Sample Duplicate)
P	Pesticide dual column results, greater then 25%
TNTC	Too numerous to count

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: H10060284 : Nell Hall No. 1 | Project Number: Nell Hall No. 1

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
H10060284001	**MW-4**	SW-846 3010A	DIGM/1822	SW-846 6010B	ICP/1461
H10060284002	**MW-5**	SW-846 3010A	DIGM/1822	SW-846 6010B	ICP/1461
H10060284003	**MW-6**	SW-846 3010A	DIGM/1822	SW-846 6010B	ICP/1461
H10060284001	**MW-4**	SW-846 5030	MSV/2054	SW-846 8260B	MSV/2055
H10060284002	**MW-5**	SW-846 5030	MSV/2054	SW-846 8260B	MSV/2055
H10060284003	**MW-6**	SW-846 5030	MSV/2054	SW-846 8260B	MSV/2055
H10060284004	**Duplicate**	SW-846 5030	MSV/2054	SW-846 8260B	MSV/2055
H10060284005	**Trip Blank**	SW-846 5030	MSV/2054	SW-846 8260B	MSV/2055
H10060284003	**MW-6**	SW-846 5030	MSV/2056	SW-846 8260B	MSV/2057
H10060284004	**Duplicate**	SW-846 5030	MSV/2056	SW-846 8260B	MSV/2057

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Sample Receipt Checklist

WorkOrder:	H10060284	Received By	LOG
Date and Time	06/11/2010 09:15	Carrier Name:	FEDEXS
Temperature:	3.0°C	Chilled By:	Water Ice

1.	Shipping container/cooler in good condition?	YES
2.	Custody seals intact on shipping container/cooler?	YES
3.	Custody seals intact on sample bottles?	Not Present
4.	Chain of custody present?	YES
5.	Chain of custody signed when relinquished and received?	YES
6.	Chain of custody agrees with sample labels?	NO
	COC indicates that the Trip Blank was collected on 6/11/10 at 8:20 but since the cooler was received on 6/11/10 that is not possible. Logged in 6/10/10 at 8:20 as collection date and time for Trip Blank. Trip Blank was supplied by SPL	
7.	Samples in proper container/bottle?	YES
8.	Samples containers intact?	YES
9.	Sufficient sample volume for indicated test?	YES
10.	All samples received within holding time?	YES
11.	Container/Temp Blank temperature in compliance?	YES
12.	Water - VOA vials have zero headspace?	YES
13.	Water - Preservation checked upon receipt(except VOA*)?	Not Applicable

*VOA Preservation Checked After Sample Analysis

SPL Representative: Contact Date & Time:

Client Name Contacted:

Client Instructions:

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Fax: (713) 660-8975

SPL, Inc.

Analysis Request & Chain of Custody Record

H10060284

280412

Page ___ of ___

Client Name:	Tetra Tech / ConocoPhillips
Address:	6121 Indian School Rd NE #200
City	ABQ State NM Zip 87110
Phone/Fax:	505-237-8440 505-237-8656
Client Contact:	Kelly Blanchard Email: kellyblanchard@tetratech.com
Project Name/No.:	Nell Hall No. 1
Site Name:	
Site Location:	Flora Vista, NM
Invoice To:	ConocoPhillips Ph:

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil A=air SL=sludge E=encore X=other)	bottle (P=plastic A=amber glass G=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HCl 2=HNO3 3=H2SO4 X=other)	Number of Containers	BTEX	Dissolved Fe							
MW-4	6.9.10	1720		X	W	V	40	1	3	X								
MW-4	6.9.10	1720		X	W	P	16	Ø	1		X							
MW-5	6.9.10	1730		X	W	V	40	1	3	X								
MW-5	6.9.10	1730		X	W	P	16	Ø	1		X							
MW-6	6.9.10	1800		X	W	V	40	1	3	X								
MW-6	6.9.10	1800		X	W	P	16	Ø	1		X							
Duplicate	6.9.10	1805		X	W	V	40	1	3	X								
Trip Blank	6.[illegible].10	0820			W	V	40	1	2	X								

RUSH

Client/Consultant Remarks: please filter & preserve metals container before analysis

Laboratory remarks:

Intact? ☑ Y ☐ N
Ice? ☑ Y ☐ N
Temp: 3.0

Requested TAT

☐ 1 Business Day ☐ Contract
☐ 2 Business Days ☒ Standard
☐ 3 Business Days
☐ Other ______
Rush TAT requires prior notice

Special Reporting Requirements Results: Fax ☐ Email ☒ PDF ☒
Standard QC ☒ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler: [signature]	date 6.10.10	time 0830	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	date 6/11/10	time 9:15	6. Received by Laboratory: Amanda Vickman

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