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QUARTERLY GWMR

04/28/2011

3R340

TETRA TECH, INC.

6121 Indian School Rd. NE Suite 200
Albuquerque, NM 87110
(505) 237-8440

April 28, 2011

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2011 MAY -2 A11:54

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

RE: ConocoPhillips Randleman No. 1 Quarterly Groundwater Monitoring Report
Aztec, New Mexico

Dear Mr. von Gonten:

Enclosed please find a copy of the above-referenced document as compiled by Tetra Tech, Inc., formerly Maxim Technologies, for this Aztec area site.

Please do not hesitate to contact me at (505) 237-8440 if you have any questions or require additional information.

Sincerely,

Kelly E. Blanchard

Kelly E. Blanchard
Project Manager/Geologist

Enclosures (1)

Cc: Brandon Powell, NMOCD Aztec, NM
Terry Lauck, ConocoPhillips RM&R (electronic only)

QUARTERLY GROUNDWATER MONITORING REPORT
DECEMBER 2010

CONOCOPHILLIPS COMPANY
RANDLEMAN No.1
PRODUCTION FACILITY
SAN JUAN COUNTY, NEW MEXICO

OCD # 3RP-340-0

API # 30-045-10698

Prepared for:

ConocoPhillips

Risk Management and Remediation
420 South Keeler Avenue
Bartlesville, OK 74004

Prepared by:

TETRA TECH, INC.

6121 Indian School Rd. NE, Suite 200
Albuquerque, NM 87110
Tetra Tech Project No. 1158690090

January 2010

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QUARTERLY GROUNDWATER MONITORING REPORT
RANDLEMAN NO.1, SAN JUAN COUNTY, NEW MEXICO
DECEMBER 2010

1.0 INTRODUCTION

This report discusses the groundwater sampling event performed by Tetra Tech, Inc. (Tetra Tech) on December 17, 2010 at the ConocoPhillips Company Randleman No. 1 site located outside of Aztec, New Mexico (Site). The Site is situated on private land in Section 13, Township 31N, Range 11W, of San Juan County, New Mexico. A site location map and detail map are included as **Figures 1** and **2**, respectively.

1.1 Site Background

The historical timeline for the Site is summarized below, and is also presented in **Table 1**.

In April 1997, an unlined surface impoundment (**Figure 2**) was discovered to have been impacted by petroleum hydrocarbons. On April 29, 1997, excavation of the soil beneath the impoundment began; once complete, a total of 613 cubic yards of hydrocarbon impacted soil were removed and landfarmed at the nearby Randleman No. 3 site (Williams 2002). Three monitor wells were installed at the Site on May 14, 1997, and quarterly groundwater monitoring was conducted through March 1998. Evaluation of groundwater monitoring results initiated another excavation in April 1998 of 2,220 cubic yards of hydrocarbon impacted soil "to address residual soil contamination extending to the south of the original excavated area" (Williams, 2002). Quarterly groundwater monitoring was continued through September 2000, and after 4 consecutive quarters of groundwater monitoring results below New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standards for benzene, toluene, ethylbenzene, and total xylenes (BTEX), Williams Environmental Services (Williams) requested that the New Mexico Oil Conservation Division (OCD) grant closure status for the Site. In June 2002, OCD granted closure for the Site, provided that Williams plug and abandon all Site groundwater monitor wells according to OCD standards (NMEMNRD, 2002). The historical excavation area and historical groundwater monitor wells are displayed in **Figure 2**.

On February 23, 2009, a release of approximately 60 barrels of condensate occurred as a result of a hole in an on-Site production tank. Envirotech Inc. of Farmington, NM (Envirotech) excavated an area of approximately 42 ft. x 51 ft. x 7 ft. deep on February 26, 2009. Seven composite soil samples were collected during excavation activities and were field analyzed for total petroleum hydrocarbons (TPH) using Environmental Protection Agency (EPA) Method 418.1. Additionally, samples were field analyzed for organic vapors using a photoionization detector (PID) and heated headspace techniques. TPH results ranged from 8 to 1,080 parts per million (ppm) in the walls of the excavation. Organic vapor concentrations ranged from 6.8 ppm to 898 ppm. Due to levels of TPH and organic vapors above OCD action levels, the excavation was

continued on February 27, 2009 (Envirotech, 2009). The total area of excavation measured 81 ft x 43 ft x 20 ft. deep. The excavation area is depicted in **Figure 2**.

On March 2, 2009, groundwater was found seeping into the southeast corner of the excavation at a depth of approximately 20 feet bgs. A vacuum truck operated by Rock Springs was contracted by Envirotech to collect groundwater from the excavation. After removal of accumulated groundwater, Envirotech obtained a soil sample from the southeast corner of the excavation at a depth of 20 feet bgs. TPH and organic vapor results were found to be above OCD action levels. During field analysis of the soil sample, groundwater continued to seep into the excavation. Groundwater was again removed from the excavation, and additional excavation was performed to obtain a soil sample below OCD action levels. A groundwater sample was collected and sent for laboratory analysis of volatile organic compounds by EPA Method 8260B. The groundwater sample was found to contain benzene, total xylenes and total naphthalenes above NMWQCC groundwater quality standards. Soon after the groundwater sample was taken, the excavation caved in making further water removal via the vacuum truck impossible (Envirotech, 2009). The excavation area is depicted in **Figure 2**.

A total of 611 cubic yards of soil were removed from the Site and were transported to an OCD-permitted facility; clean fill was obtained from the landowner to backfill the excavation. Envirotech recommended the installation of groundwater monitor wells at the Site under OCD guidelines (Envirotech, 2009).

Tetra Tech installed four groundwater monitor wells at the Site between June 9, 2009 and June 10, 2009. A generalized geologic cross section was produced using soil boring data collected during monitoring well installation (**Figure 3**). Following drilling activities in June 2009, the casings for Site monitor wells were surveyed using an arbitrary reference-elevation of 100 feet above mean sea level (amsl). Data obtained from the Site survey is used in conjunction with quarterly monitoring data to produce groundwater elevation maps for the Site (**Figure 4**). Groundwater flow direction at the Site is to the east/southeast.

Tetra Tech began conducting groundwater monitoring events at the Site on June 12, 2009. Hydrocarbon absorbent socks were placed in Monitor Wells MW-2 and MW-3 on June 18, 2009 due to the presence of a spotty, discontinuous light non-aqueous phase liquid (LNAPL) sheen present in purge water during sampling. The socks were removed during the March 2010 sampling event. Since the removal of the socks, LNAPL has not been detected in MW-2 or in MW-3. Soil and groundwater samples were also collected from the Kiffen Canyon Wash on October 21, 2009 and analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX). In both the soil and groundwater collected from Kiffen Canyon Wash, BTEX constituents were found to be below standards.

2.0 GROUNDWATER MONITORING SUMMARY, SAMPLING METHODOLOGY AND RESULTS

2.1 Monitoring Summary

A groundwater sampling event was conducted at the Site on December 17, 2010. Prior to collection of groundwater samples from Monitor Wells MW-1, MW-2, MW-3 and MW-4, depth to groundwater in each well was measured using a dual interface probe (**Table 2**). A groundwater elevation contour map reflecting December 2010 groundwater elevation is presented as **Figure 4**.

2.2 Groundwater Sampling Methodology

During the December 17, 2010 groundwater monitoring event, Site monitor wells were purged of at least 3 casing volumes of groundwater using a 1.5-inch diameter, polyethylene dedicated bailer. While bailing each well, groundwater parameters were collected using a YSI 556 multi-parameter sonde and results were recorded on a Tetra Tech Water Sampling Field Form (**Appendix A**). Groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped under chain-of-custody documentation to Southern Petroleum Laboratory (SPL) of Houston, Texas.

December 2010 groundwater samples were analyzed for BTEX by EPA Method 8260B; sulfate and chloride by EPA Method E300.0; TDS by EPA Method 2540C; and dissolved manganese by EPA Method 6010B (**Table 3**). A summary of analytical results from the December 17, 2010 sampling event is displayed in **Table 4**. Tetra Tech has prepared **Table 4** as a historical analytical results table to include all quarterly analytical parameters to help document trends in constituent concentrations over time. Results from future groundwater monitoring events at the Site will be compiled in this table.

2.3 Groundwater Sampling Analytical Results

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

- **Chloride**
    - The NMWQCC domestic water supply groundwater quality standard for chloride is 250 milligrams per liter (mg/L); in December 2010, the groundwater sample collected from MW-4, the up-gradient monitoring well, was found to contain chloride at concentration of 2,350 mg/L. This is the seventh consecutive quarter that Monitor Wells MW-1, MW-2, and MW-3 have been below the chloride standard.
- **Sulfate**
    - The NMWQCC domestic water supply groundwater quality standard for sulfate is 600 mg/L; groundwater samples collected in December 2010 from Monitor Well MW-1, MW-2, MW-3 and MW-4 were found to contain sulfate at concentrations of 2,100 mg/L, 1,520 mg/L, 1,760 mg/L, and 3,570 mg/L, respectively. Sulfate concentrations increased in all wells this quarter.

- **Manganese**
  - The NMWQCC domestic water supply groundwater quality standard for manganese is 0.2 milligrams per liter (mg/L). In December 2010, groundwater samples collected from monitor wells MW-2, MW-3 and MW-4 were found to contain concentrations of manganese above the standard at 2.28 mg/L, 0.41 mg/L, and 1.68 mg/L, respectively.
- **Benzene**
  - The human health NMWQCC groundwater quality standard for benzene is 10 µg/L. Benzene concentrations measured in the December 2010 sampling event were found to all be below NMWQCC standards. *This is the second sampling event with benzene below* standards in all monitoring wells.
- **Total Xylenes**
  - The human health NMWQCC groundwater quality standard for total xylenes is 620 µg/L. The December 2010 groundwater samples collected from all Monitor Wells were below the NMWQCC standard for total xylenes; representing the forth quarter of NMWQCC compliance for total xylenes at the Site.
- **Total Dissolved Solids**
  - The human health NMWQCC groundwater quality standard for total dissolved solids is 1,000 mg/L. The December 2010 groundwater samples collected from Monitor Wells MW-1, MW-2, MW-3 and MW-4 were above the standard with concentrations of 4,340 µg/L, 2,760 µg/L, 2,590 µg/L and 9,400 µg/L, respectively. It should be noted that the up-gradient well, MW-4, consistently contains TDS concentrations at higher levels than the other Site monitoring wells.

The corresponding laboratory analytical report for the December 2010 groundwater sampling event, including quality control summaries, is included in **Appendix B**. A map showing BTEX concentrations in groundwater from Site monitoring wells during the December 2010 groundwater sampling event is included as **Figure 5**. An isopleths map showing sulfate, chloride, and TDS concentrations is presented as **Figure 6**.

3.0 CONCLUSIONS AND RECOMMENDATIONS

Tetra Tech recommends continued quarterly groundwater sampling at the Site in order to provide sufficient data for Site closure. Site closure will be requested when groundwater analytical results indicate that all constituents of concern are consistently below NMWQCC groundwater quality standards. 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

Envirotech Incorporated (2009). *Spill Cleanup Report, Located at: Burlington Resources* [sic] *Randleman #1 Well Site, Section 13, Township 31N, Range 11W, San Juan County, New Mexico.* Prepared for ConocoPhillips. Report Dated February 2009. 3 pp (not including Figures, Tables, and Appendices).

New Mexico Energy, Minerals and Natural Resources Department (2002). *Case # 3R0-340, Randleman #1 Dehy Pit, San Juan County* [sic], *New Mexico.* Letter from NMEMNRD to Williams Field Services. Dated June 14, 2002. 6 pp.

Williams Environmental Services (2002). *Randleman #1 Pit Remediation and Closure Report. Prepared for the New Mexico Oil Conservation Division.* Report Dated February 11, 2002. 3 pp (not including Figures, Tables, and Appendices).

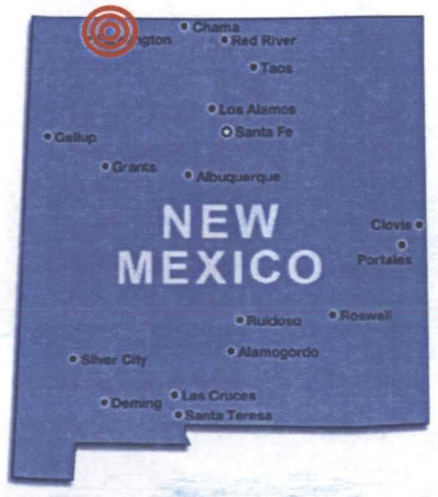
FIGURES

1. Site Location Map
2. Site Detail Map
3. Generalized Geologic Cross Section
4. Groundwater Elevation Map – December 2010
5. BTEX Groundwater Concentration Map – December 2010
6. Sulfate, Chloride, and TDS Isopleth Map – December 2010

ConocoPhillips - High Resolution Aerial Imagery 2008

FIGURE 1.

Site Location Map
ConocoPhillips
Randleman No. 1
Aztec, NM



ConocoPhillips
Randleman No.1 Site Location

0 225 450
Feet

N

TETRA TECH, INC.

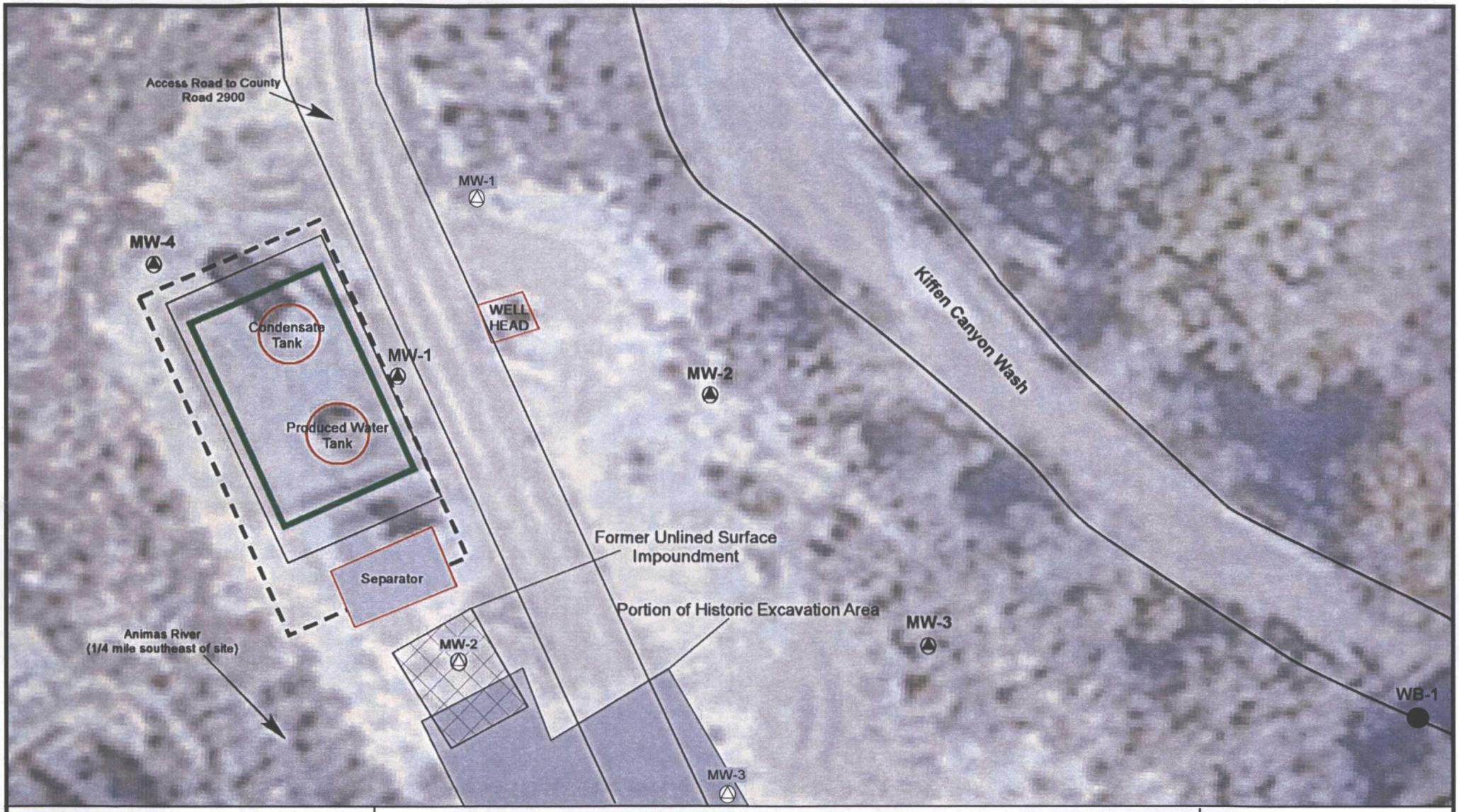


FIGURE 2:
SITE DETAIL MAP
CONOCOPHILLIPS COMPANY
RANDLEMAN #1
GAS PRODUCTION WELL
Sec 13, T31N, R11W
Aztec, New Mexico

LEGEND

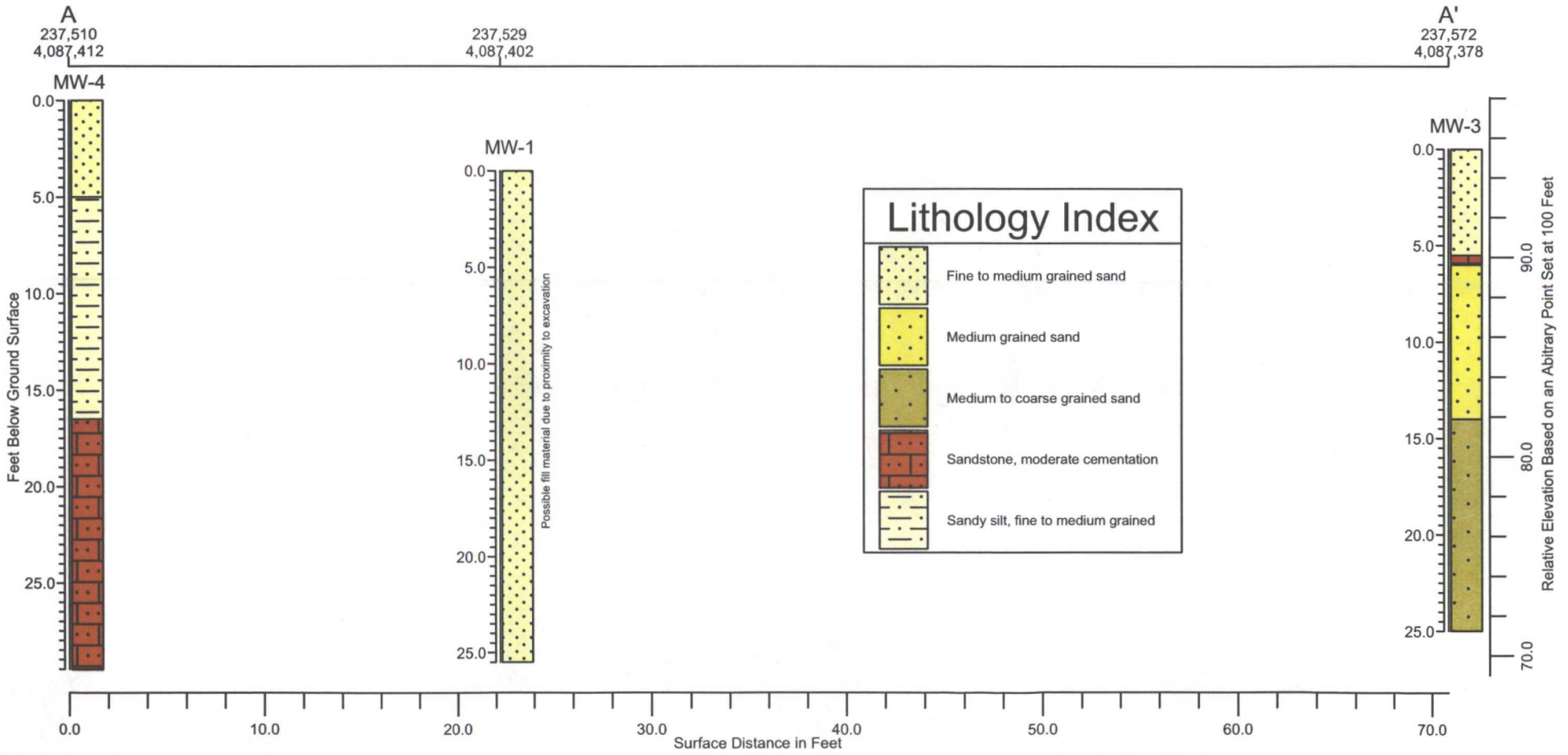
- GENERAL AREA of FEBRUARY 2009 EXCAVATION
- EQUIPMENT
- BERM
- MONITORING WELL
- APPROXIMATE LOCATION of HISTORIC MONITORING WELL (plugged and abandoned)
- KIFFEN CANYON WASH BORING LOCATION

0 15 30
FEET

N

TETRA TECH, INC.

Figure 3. Randleman #1 - Cross-Section A-A'



2/11/2010

TETRA TECH

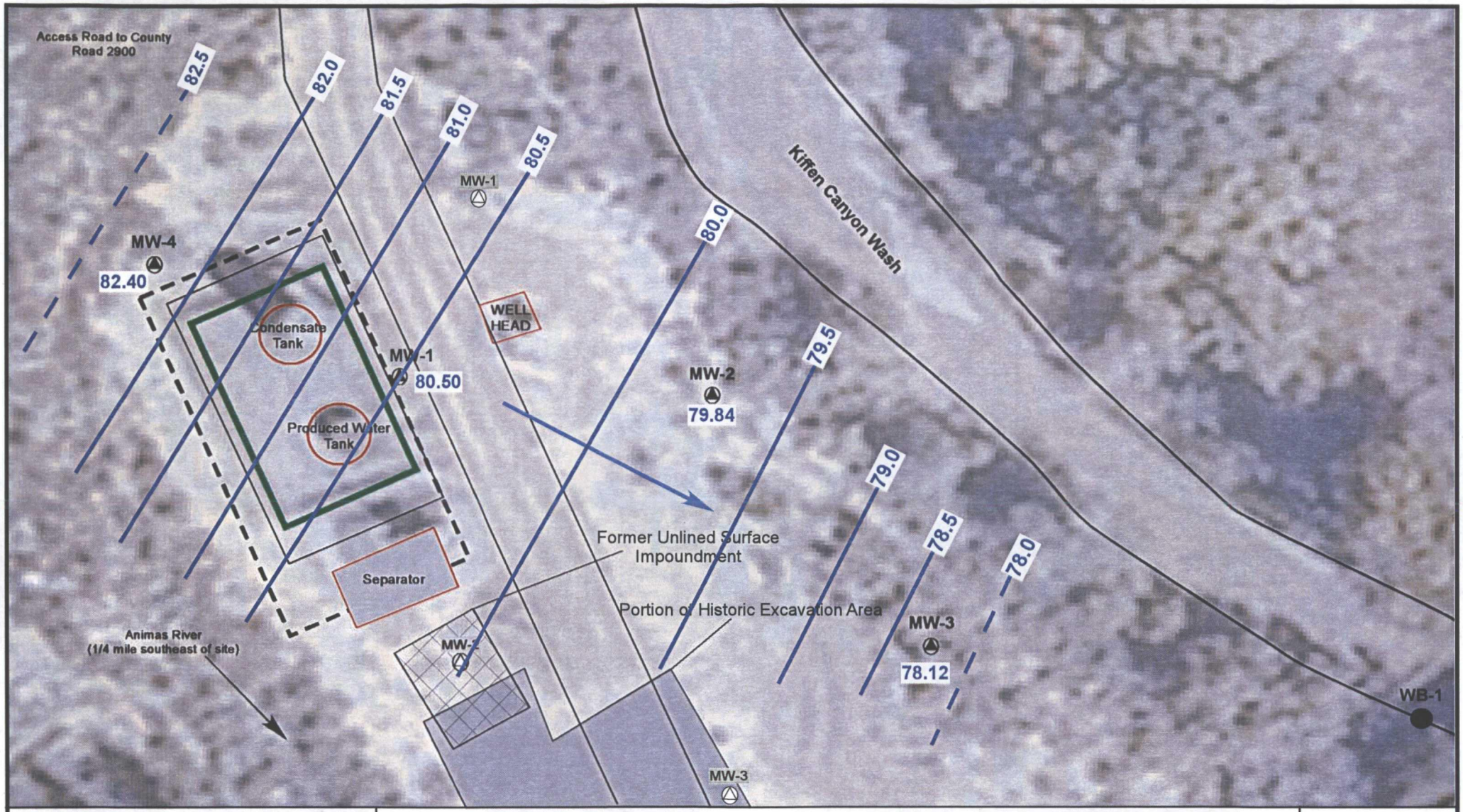


FIGURE 4:
GROUNDWATER ELEVATION MAP - December 2010
CONOCOPHILLIPS COMPANY
RANDLEMAN #1
GAS PRODUCTION WELL
Sec 13, T31N, R11W
Aztec, New Mexico

GENERAL AREA of EXCAVATION
BERM
MONITORING WELL
GROUNDWATER ELEVATION CONTOUR
GROUNDWATER FLOW DIRECTION
APPROXIMATE LOCATION of HISTORIC MONITORING WELL (plugged and abandoned)

80.80 GROUNDWATER ELEVATION (elevation relative to wellhead; set at an arbitrary 100 feet above mean sea level)

KIFFEN CANYON WASH BORING LOCATION

N

0 15 30
FEET

TETRA TECH, INC.

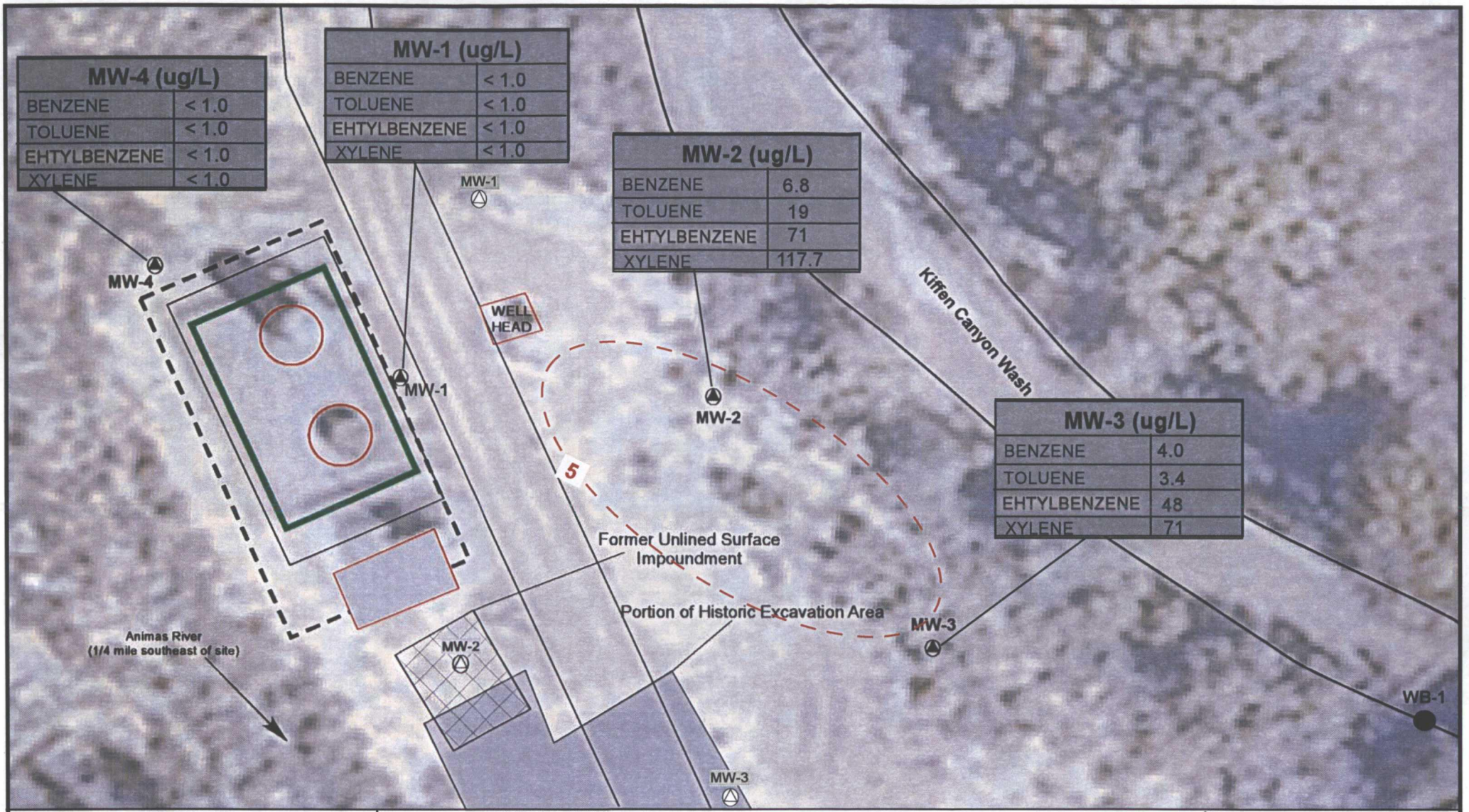


FIGURE 5:
BTEX GROUNDWATER CONCENTRATION MAP
December 2010
CONOCOPHILLIPS COMPANY
RANDLEMAN #1
GAS PRODUCTION WELL
Sec 13, T31N, R11W
Aztec, New Mexico

LEGEND

- EXCAVATION AREA
- BERM
- MONITORING WELL
- EQUIPMENT
- APPROXIMATE LOCATION of HISTORIC MONITORING WELL (plugged and abandoned)
- KIFFEN CANYON WASH BORING LOCATION
- BENZENE CONCENTRATION CONTOUR

N

0 15 30
FEET

TETRA TECH, INC.

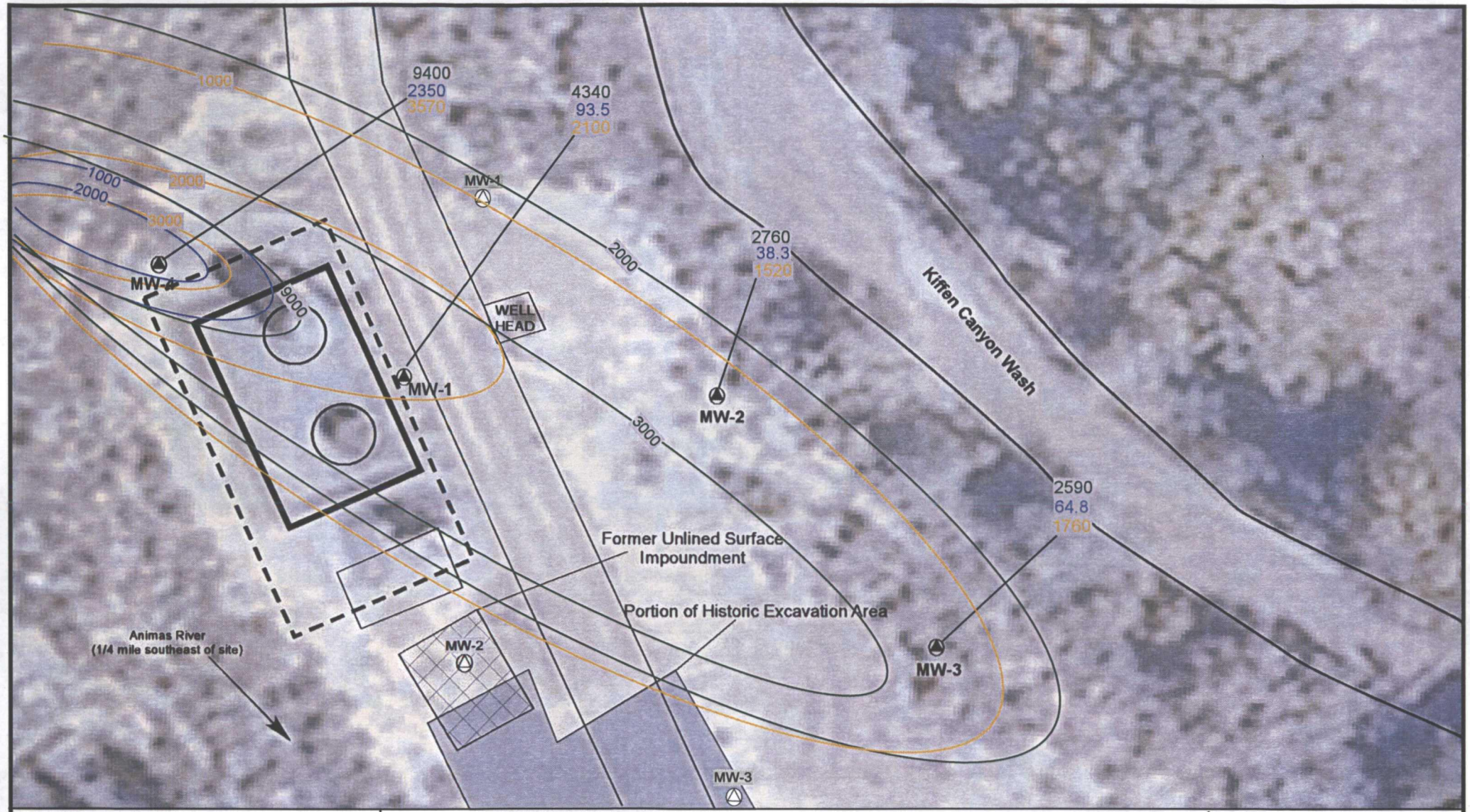


FIGURE 6:
Sulfate, Chloride, and TDS Isopleth Map

December 2010
CONOCOPHILLIPS COMPANY
RANDLEMAN #1
GAS PRODUCTION WELL
Sec 13, T31N, R11W
Aztec, New Mexico

LEGEND

- EXCAVATION AREA
- BERM/EQUIPMENT
- MONITORING WELL
- APPROXIMATE LOCATION of HISTORIC MONITORING WELL (plugged and abandoned)
- SULFATE
- CHLORIDE
- TDS

N

0 15 30
FEET

TETRA TECH, INC.

TABLES

1. Site History Timeline
2. Groundwater Elevation Data Summary (June 2009 – December 2010)
3. Groundwater Laboratory Analytical Results Summary, Baseline Parameters (June 2009)
4. Groundwater Laboratory Analytical Results Summary, Quarterly Parameters (June 2009 – December 2010)

Table 1. Randleman No. 1 Site History Timeline

DATE	ACTIVITY
September 20, 1951	Well spudded by Southern Union Gas Company.
August 1, 1952	Well acquired by Aztec Oil and Gas Company.
December 1, 1976	Southland Royalty Company acquired Aztec Oil and Gas Company.
November 22, 1985	Southland Royalty Company acquired by Burlington Resources.
April 1, 1997	An unlined surface impoundment was discovered to have been impacted by petroleum hydrocarbons. On April 29, 1997, excavation of the soil beneath the impoundment began; once complete, a total of 613 cubic yards of hydrocarbon impacted soil were removed and landfarmed at the nearby Randleman #3 site.
May 14, 1997	Three groundwater monitor wells were installed at the Site. Groundwater monitoring was initiated on a quarterly basis through March 1998.
April 1, 1998	Evaluation of groundwater monitoring results initiated another excavation of 2,220 cubic yards of hydrocarbon impacted soil "to address residual soil contamination extending to the south of the original excavated area" (Williams, 2002).
February 1, 2002	Quarterly groundwater monitoring was continued through September 2000, and after 4 consecutive quarters of groundwater quality monitoring results below New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standards for benzene, toluene, ethylbenzene, and total xylenes (BTEX), Williams Environmental Services (Williams) requested that the New Mexico Oil Conservation Division (OCD) grant closure status for the Site.
June 1, 2002	OCD granted closure for the Site, provided that Williams plug and abandon all Site groundwater monitoring wells according to OCD standards (NMEMNRD, 2002). The historical excavation area and historical groundwater monitor wells are displayed in Figure 2.
March 31, 2006	ConocoPhillips Company acquired Burlington Resources and all assets.
February 23, 2009	Approximately 60 barrels of condensate were found to have spilled from a hole located on the back side of an on-Site condensate tank into the bermed area. The spilled fluids remained in the berm and none of the condensate was recovered. Form C-141 stated that the spill impacted the soil on the ground surface around the tank, that the production tank was to be removed, and the affected soils were to be excavated.
February 26, 2009	Envirotech Inc. of Farmington, NM (Envirotech) performed the soil excavation and collected soil samples for analysis. The area of release was excavated to approximately 42 feet by 51 feet by 7 feet deep. 7 composite soil samples were collected from the excavation and were analyzed for total petroleum hydrocarbons (TPH) using EPA Method 418.1. Additionally, organic vapors were measured using a Photoionization Detector (PID). TPH results ranged from 8 parts per million (ppm) in the north wall sample to 1,080 ppm in the south wall sample. The OCD recommended action level for TPH at the Site was determined to be 100 ppm. Organic vapor concentrations ranged from 6.8 ppm from the north wall sample, to 898 ppm in the south wall sample. Due to high levels of TPH and organic vapors, the excavation was continued on February 27, 2009.
February 27, 2009	Envirotech continued the excavation and sampling activities. Samples collected from the north, west, and east ends of the excavation on February 26, 2009 were found to be below OCD action levels for TPH, the focus of the excavation on February 27, 2009 was the south wall, the southeast wall, and the bottom of the southeast corner. The final excavation measured 81 feet by 43 feet by 20 feet deep (total depth is given for the deepest part of the excavation; other areas determined to be below OCD action levels went to approximately 8 feet bgs). Eight soil samples were collected and analyzed in the field for TPH and organic vapors. Excavation continued until all samples were found to be below 100 ppm for both TPH and organic vapors.
March 2, 2009	Groundwater began to seep into the southeast corner of the excavation at 20 feet bgs. A vacuum truck was contracted to remove groundwater from the excavation. After removal of groundwater, a soil sample from the southeast corner of the excavation was collected. TPH and organic vapor results were found to be above OCD action levels. More water was then removed from the excavation, and additional soil removal was performed. A groundwater sample was collected from the area where water continued to seep into the excavation, and was analyzed for volatile organic compounds by EPA Method 8260. The groundwater sample was found to contain benzene, total xylenes and total naphthalenes above New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standards. Once this sample had been obtained, the excavation caved in, making further water removal impossible (Envirotech, 2009). A total of 611 cubic yards of soil were romoved from the Site. Clean fill was used to backfill the excavation.
June 9 through 11, 2009	Tetra Tech installs four groundwater monitor wells at the Site; MW-1, MW-2, MW-3 and MW-4.
June 12, 2009	Tetra Tech conducts the first groundwater monitoring event at the Site.
June 17, 2009	Depth to water measurements were taken by Tetra Tech in Site monitor wells to determine if hydrocarbons were accumulating in the water column. Hydrocarbon sheen was detected in MW-2 and MW-3.

Table 1. Randleman No. 1 Site History Timeline

June 18, 2009	Hydrocarbon-absorbent socks were placed in monitor wells MW-2 and MW-3 by Tetra Tech.
September 23, 2009	Second quarterly groundwater monitoring event at the Site conducted by Tetra Tech.
October 1, 2009	Tetra Tech on Site to hand auger one boring near the Kiffen Canyon Wash, which is located downgradient and east of the Site. Groundwater and soil samples collected from boring. No BTEX impacts were found.
December 16, 2009	Third quarterly groundwater monitoring event at the Site conducted by Tetra Tech.
April 1, 2010	Fourth quarterly groundwater monitoring event at the Site conducted by Tetra Tech.
June 9, 2010	Fifth quarterly groundwater monitoring event at the Site conducted by Tetra Tech.
September 20, 2010	Sixth quarterly groundwater monitoring event at the Site conducted by Tetra Tech. Lock and cap were observed missing from MW-4 -this was reported. The ground near MW-3 has shifted and the casing is sticking out of the completion. As a result, the PVC had to be cut and the site was re-surveyed by Tetra Tech.
December 17, 2010	Seventh quarterly groundwater monitoring event at the Site conducted by Tetra Tech.

Table 2. Groundwater Elevation Data Summary - ConocoPhillips Company Randleman No. 1

Well ID	Total Depth (ft bgs)	Screen Interval (ft)	*Elevation (ft) (TOC)	Date Measured	Depth to Groundwater (ft below TOC)	Relative Groundwater Elevation
MW-1	25.5	9 - 24	95.19	6/12/2009	13.98	81.21
				6/14/2009	13.96	81.23
				9/23/2009	13.97	81.22
				12/16/2009	14.30	80.89
				4/1/2010	14.39	80.80
				6/9/2010	13.99	81.20
			94.90	9/20/2010	14.54	80.36
				12/17/2010	14.40	80.50
MW-2	23.80	8.9 - 23.8	96.79	6/12/2009	15.57	81.22
				6/14/2009	15.63	81.16
				9/23/2009	15.67	81.12
				12/16/2009	16.41	80.38
				4/1/2010	16.75	80.04
				6/9/2010	15.71	81.08
			96.51	9/20/2010	16.28	80.23
				12/17/2010	16.67	79.84
MW-3	22.00	6.5 - 21.5	96.31	6/12/2009	16.00	80.31
				6/14/2009	15.97	80.34
				9/23/2009	15.78	80.53
				12/16/2009	16.77	79.54
				4/1/2010	16.79	79.52
				6/9/2010	15.89	80.42
			96.07	9/20/2010	16.95	79.12
				12/17/2010	17.95	78.12
MW-4	29.50	11 - 26	98.83	6/12/2009	17.68	81.15
				6/14/2009	17.52	81.31
				9/23/2009	17.56	81.27
				12/16/2009	17.86	80.97
				4/1/2010	17.94	80.89
				6/9/2010	17.57	81.26
			98.54	9/20/2010	18.06	80.48
				12/17/2010	16.14	82.40

ft = Feet
TOC = Top of casing
bgs = below ground surface
* Elevation relative to an arbitrary data point of 100 feet; resurveyed during 9/20/10 sampling event

Table 4. ConocoPhillips Randleman No. 1 - Quarterly Groundwater Analytical Results Summary

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Naphthalene (µg/L)	Chloride (mg/L)	Sulfate (mg/L)	Aluminum (mg/L)	Iron (mg/L)	Chromium (mg/L)	Manganese (mg/L)	Total Dissolved Solids (mg/L)
MW-1	6/14/2009	5.1	7.6	< 5	9.7	< 5	119	**1690**	9.22*	6.81*	.00601*	4.79*	NA
	9/23/2009	**18**	5.4	1.3	11.6	< 1	80.5	**1640**	< 0.1	< 0.02	< 0.005	0.17	**2880**
	12/16/2009	< 1	< 1	< 1	< 1	NA	127	**1960**	NA	NA	NA	0.108	**3140**
	4/1/2010	< 1	< 1	< 1	< 1	NA	72.3	**1440**	NA	NA	NA	0.0849	**2850**
	6/9/2010	< 1	< 1	< 1	< 1	NA	83.8	**1450**	NA	NA	NA	0.114	**3340**
	9/20/2010	5.3	< 1	< 1	< 1	NA	84.9	**1710**	NA	NA	NA	**0.207**	**4070**
	12/17/2010	<1	<1	<1	<1	NA	93.5	**2100**	NA	NA	NA	0.131	**4340**
MW-2	6/14/2009	9.4	**1100**	180	**2280**	21	40.1	**1360**	2.99*	3.7*	< 0.005*	3.56*	NA
	9/23/2009	7.7	< 1	110	**720**	16	39.4	**1390**	< 0.1	0.0239	< 0.005	**6.82**	**2480**
	12/16/2009	**20**	7.9	240	**777.8**	NA	63.3	**1510**	NA	NA	NA	**5.26**	**2390**
	4/1/2010	9	27	180	547	NA	56.5	**1170**	NA	NA	NA	**4.1**	**2460**
	6/9/2010	3.8	9.3	99	265.6	NA	48.7	**1280**	NA	NA	NA	**3.24**	**2590**
	9/20/2010	5.0	7.6	61	136.5	NA	48.7	**1390**	NA	NA	NA	**2.7**	**2440**
	12/17/2010	6.8	19	71	117.7	NA	38.3	**1520**	NA	NA	NA	**2.28**	**2760**
MW-3	6/14/2009	**10**	**1400**	490	**4050**	**36**	40.3	**1510**	1.1*	1.65*	< 0.005*	3*	NA
	9/23/2009	**13**	8.5	89	320	3.9	64.5	**1500**	< 0.1	0.0486	< 0.005	**1.11**	**2720**
	12/16/2009	**18**	17	96	280	NA	99.1	**1920**	NA	NA	NA	**0.932**	**2560**
	4/1/2010	**18**	76	190	590	NA	5.34	**796**	NA	NA	NA	**1.04**	**1650**
	6/9/2010	**12**	20	24	69	NA	30.8	**989**	NA	NA	NA	0.193	**2200**
	9/20/2010	9.0	11	79	142	NA	49.9	493	NA	NA	NA	**0.818**	**2840**
	12/17/2010	4.0	3.4	48	71	NA	64.8	**1760**	NA	NA	NA	**0.41**	**2590**
MW-4	6/14/2009	< 5	< 5	< 5	< 5	< 5	**2310**	**4190**	13.9*	20*	0.117*	4.92*	NA
	9/23/2009	< 1	< 1	< 1	< 1	< 1	**2130**	**3320**	< 0.1	0.0308	< 0.005	**2.73**	**8600**
	12/16/2009	< 1	< 1	< 1	< 1	NA	**3430**	**4110**	NA	NA	NA	**1.8**	**9600**
	4/1/2010	< 1	< 1	< 1	< 1	NA	**2350**	**3110**	NA	NA	NA	**1.52**	**8560**
	6/9/2010	< 1	< 1	< 1	< 1	NA	**2190**	**2710**	NA	NA	NA	**1.06**	**4720**
	9/20/2010	< 1	< 1	< 1	< 1	NA	**2640**	**3260**	NA	NA	NA	**1.24**	**9550**
	12/17/2010	<1	<1	<1	<1	NA	**2350**	**3570**	NA	NA	NA	**1.68**	**9400**
NMWQCC Standards		**10 (µg/L)**	**750 (µg/L)**	**750 (µg/L)**	**620 (µg/L)**	**30 (µg/L)**	**250 (mg/L)**	**600 (mg/L)**	**5 (mg/L)**	**1 (mg/L)**	**0.05 (mg/L)**	**0.2 (mg/L)**	**1000 (mg/L)**

Explanation
ND = Not Detected
NMWQCC = New Mexico Water Quality Control Commission
mg/L = milligrams per liter (parts per million)
µg/L = micrograms per liter (parts per billion)
NA = Not Analyzed
<0.7 = Below laboratory detection limit of 0.7 ug/L
Bold = concentrations that exceed the NMWQCC limits
* = Results reported for total metals analysis, results cannot be compared to NMWQCC Standards for dissolved metals

APPENDIX A

Groundwater Sampling Field Forms

TETRA TECH, INC.

WATER SAMPLING FIELD FORM

Project Name Randleman 1 Page 1 of 4

ct No. 114-690126

Site Location Aztec, NM

Site/Well No. MW-1 Coded/ Replicate No. 1128 Date 12-17-10

Weather Overcast cold/windy Time Sampling Began 1110 Time Sampling Completed 1128

EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 25.5 Water-Level Elevation _____

Held _____ Depth to Water Below MP 14.4 Diameter of Casing 2"

Wet _____ Water Column in Well 11.1 Gallons Pumped/Bailed Prior to Sampling 5.5

Gallons per Foot 0.16

Gallons in Well 1.776x3= 5.3

Sampling Pump Intake Setting (feet below land surface) —

Purging Equipment Purge pump / Bailer

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm³)	TDS (g/L)	DO (mg/L)	DO %	ORP (mV)	Volume (gal.)
1123	13.33	7.13	2815	2.319	3.93	36.0	80.0	5.0
1124	14.47	6.90	2897	2.358	1.60	15.7	78.9	5.25
1125	14.67	6.87	2913	2.359	1.31	12.9	80.4	5.5

Sampling Equipment Purge Pump/Bailer

Constituents Sampled	Container Description	Preservative
BTEX	3 40mL VOAs	HCl
Chloride, Sulfate, TDS	32 oz Plastic	None
Dissolved MN	16 oz Plastic	None

Remarks H_2O is light gray-g No odor or sheen detected

Sampling Personnel Christine Mathews, Cassie Brown

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 Randleman 1 Page 2 of 4

ct No. 114-690186

Site Location Aztec, NM

Site/Well No. MW-2 Coded/ Replicate No. Date 12-17-10

Weather overcast cold, windy Time Sampling Began 1150 Time Sampling Completed 1212

EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface MP Elevation

Total Sounded Depth of Well Below MP 22 Water-Level Elevation

Held Depth to Water Below MP 16.67 Diameter of Casing 2"

Wet Water Column in Well 5.33 Gallons Pumped/Bailed Prior to Sampling 3.75

Gallons per Foot 0.16

Gallons in Well 0.85x3= 2.55 3.07 Sampling Pump Intake Setting (feet below land surface)

Purging Equipment Purge pump/Bailer

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm)	TDS (g/L)	DO (mg/L)	DO %	ORP (mV)	Volume (gal.)
1208	13.23	7.68	1855	1,555	1.18	11.3	-341.7	3.0
1209	13.23	7.74	1840	1,543	1.35	12.8	-339.4	3.25
1211	13.17	7.74	1839	1,544	1.44	13.7	-338.5	3.75

Sampling Equipment Purge Pump/Bailer

Constituents Sampled	Container Description	Preservative
BTEX	3 40mL VOAs	HCl
Chloride, Sulfate, TDS	32 oz Plastic	None
Dissolved MN	16 oz Plastic	None

Remarks

Sampling Personnel ~~Christine Mathews~~, Cassie Brown, Craig Brown

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 Randleman 1 Page ~~4~~ 3 of 4

ect No. 114-690136

Site Location Aztec, NM

Site/Well No. ~~MW-4~~ 3 Coded/ Replicate No. Date 12-17-16

Weather Overcast, cold, windy Time Sampling Began 1150 Time Sampling Completed 1200

EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface MP Elevation

Total Sounded Depth of Well Below MP 29.5 Water-Level Elevation

Held Depth to Water Below MP 17.95 Diameter of Casing 2"

Wet Water Column in Well 11.55 Gallons Pumped/Bailed Prior to Sampling 2.5

Gallons per Foot 0.16

Gallons in Well 1.8 x 3 = ~~5.5~~ 2.5 Sampling Pump Intake Setting (feet below land surface) —

Purging Equipment Purge pump / Bailer

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm³)	TDS (g/L)	DO (mg/L)	DO %	ORP (mV)	Volume (gal.)
1155	12.92	7.20	2257	1.906	4.01	34.1	-261.9	1.25
1157	13.04	7.12	2212	1.863	1.52	14.4	-305.2	1.75
1158	13.09	7.11	2196	1.847	1.38	13.3	-325.9	2.0

Sampling Equipment Purge Pump/Bailer

Constituents Sampled	Container Description	Preservative
BTEX	3 40mL VOAs	HCl
Chloride, Sulfate, TDS	32 oz Plastic	None
Dissolved MN	16 oz Plastic	None

Remarks H_2O GRAY w/ SHEEN & HYDRO CARBON ODOR

Sampling Personnel Christine Mathews, Cassie Brown

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 Randleman 1 Page 4 of 4

Project No. 114-690136

Site Location Aztec, NM

Site/Well No. MW-4 Coded/ Replicate No. Date 12-7-10

Weather Overcast, cold Time Sampling Began 1110 Time Sampling Completed 1145

EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface MP Elevation

Total Sounded Depth of Well Below MP 23.8 Water-Level Elevation

Held Depth to Water Below MP 16.14 Diameter of Casing 2"

Wet Water Column in Well 7.66 Gallons Pumped/Bailed Prior to Sampling

Gallons per Foot 0.16 Sampling Pump Intake (feet below land 3.75

Gallons in Well 1.23 x 3 = 3.5

Purging Equipment Purge pump / Bailer

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm)	TDS (g/L)	DO (mg/L)	DO %	ORP (mV)	Volume (gal.)
1139	14.160	7.41	9573	7.602	3.26	32.8	-52.1	3.0
1141	14.510	7.39	9419	7.650	2.39	24.8	-33.7	3.5
1142	14.161	7.39	9425	7.644	2.00	20.3	-42.4	3.75

Sampling Equipment Purge Pump/Bailer

Constituents Sampled	Container Description	Preservative
BTEX	3 40mL VOAs	HCl
Chloride, Sulfate, TDS	32 oz Plastic	None
Dissolved MN	16 oz Plastic	None

Remarks H2O is white & cloudy

Sampling Personnel ~~Christine Mathews~~, Cassie Brown, Craig Bown

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

Groundwater Laboratory Analysis Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Conoco Phillips

Certificate of Analysis Number:

10120639

Report To:		Project Name:	Randleman #1
Tetra Tech, Inc. Kelly Blanchard 6121 Indian School Road, N.E. Suite 200 Albuquerque NM 87110- ph (505) 237-8440 fax:		Site:	Aztec,NM
		Site Address:	
		PO Number:	
		State:	New Mexico
		State Cert. No.:	
		Date Reported:	12/28/2010

This Report Contains A Total Of 19 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

12/28/2010

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Conoco Phillips

Certificate of Analysis Number:

10120639

Report To:		Project Name:	Randleman #1
Tetra Tech, Inc.		Site:	Aztec,NM
Kelly Blanchard		Site Address:	
6121 Indian School Road, N.E.			
Suite 200		PO Number:	
Albuquerque		State:	New Mexico
NM		State Cert. No.:	
87110-		Date Reported:	12/28/2010
ph (505) 237-8440	fax:		

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.

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.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

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.

12/28/2010

Erica Cardenas — Date

Project Manager

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Conoco Phillips

Certificate of Analysis Number:

10120639

Report To: Tetra Tech, Inc.
Kelly Blanchard
6121 Indian School Road, N.E.
Suite 200
Albuquerque
NM
87110-
ph (505) 237-8440 fax: (505) 881-3283

Fax To:

Project Name: Randleman #1
Site: Aztec,NM
Site Address:
PO Number:
State: New Mexico
State Cert. No.:
Date Reported: 12/28/2010

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-1	10120639-01	Water	12/17/2010 11:28	12/18/2010 10:30:00 AM	303423, 303449	☐
MW-2	10120639-02	Water	12/17/2010 12:12	12/18/2010 10:30:00 AM	303423	☐
MW-3	10120639-03	Water	12/17/2010 12:00	12/18/2010 10:30:00 AM	303423	☐
MW-4	10120639-04	Water	12/17/2010 11:45	12/18/2010 10:30:00 AM	303423	☐
Duplicate	10120639-05	Water	12/17/2010 11:28	12/18/2010 10:30:00 AM	303423	☐
Trip Blank	10120639-06	Water	12/17/2010 10:00	12/18/2010 10:30:00 AM	303423	☐

Erica Cardenas
Project Manager

12/28/2010
Date

Kesavalu M. Bagawandoss Ph.D., J.D.
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-1 **Collected:** 12/17/2010 11:28 **SPL Sample ID:** 10120639-01

Site: Aztec,NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY				**MCL**	**E300.0**	**Units: mg/L**	
Chloride	93.5		5	10	12/19/10 11:00	ESK	5678072
Sulfate	2100		500	1000	12/19/10 12:36	ESK	5678078
METALS BY METHOD 6010B, DISSOLVED				**MCL**	**SW6010B**	**Units: mg/L**	
Manganese	0.131		0.005	1	12/23/10 14:00	EG	5683186

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	12/20/2010 17:00	M_W	1.00

TOTAL DISSOLVED SOLIDS				**MCL**	**SM2540 C**	**Units: mg/L**	
Total Dissolved Solids (Residue,Filterable)	4340		100	10	12/23/10 16:15	MM1	5683282
VOLATILE ORGANICS BY METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		1	1	12/21/10 22:33	JC	5680333
Ethylbenzene	ND		1	1	12/21/10 22:33	JC	5680333
Toluene	ND		1	1	12/21/10 22:33	JC	5680333
m,p-Xylene	ND		2	1	12/21/10 22:33	JC	5680333
o-Xylene	ND		1	1	12/21/10 22:33	JC	5680333
Xylenes,Total	ND		1	1	12/21/10 22:33	JC	5680333
Surr: 1,2-Dichloroethane-d4	96.5		% 70-130	1	12/21/10 22:33	JC	5680333
Surr: 4-Bromofluorobenzene	93.2		% 74-125	1	12/21/10 22:33	JC	5680333
Surr: Toluene-d8	99.5		% 82-118	1	12/21/10 22:33	JC	5680333

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-2 **Collected:** 12/17/2010 12:12 **SPL Sample ID:** 10120639-02

Site: Aztec,NM

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY				**MCL**	**E300.0**	**Units: mg/L**		
Chloride	38.3		5		10	12/19/10 11:48	ESK	5678075
Sulfate	1520		500		1000	12/19/10 12:52	ESK	5678079
METALS BY METHOD 6010B, DISSOLVED				**MCL**	**SW6010B**	**Units: mg/L**		
Manganese	2.28		0.005		1	12/23/10 14:09	EG	5683187

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	12/20/2010 17:00	M_W	1.00

TOTAL DISSOLVED SOLIDS				**MCL**	**SM2540 C**	**Units: mg/L**		
Total Dissolved Solids (Residue,Filterable)	2760		100		10	12/23/10 16:15	MM1	5683283
VOLATILE ORGANICS BY METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**		
Benzene	6.8		1		1	12/21/10 23:02	JC	5680334
Ethylbenzene	71		1		1	12/21/10 23:02	JC	5680334
Toluene	19		1		1	12/21/10 23:02	JC	5680334
m,p-Xylene	110		2		1	12/21/10 23:02	JC	5680334
o-Xylene	7.7		1		1	12/21/10 23:02	JC	5680334
Xylenes,Total	117.7		1		1	12/21/10 23:02	JC	5680334
Surr: 1,2-Dichloroethane-d4	90.8		% 70-130		1	12/21/10 23:02	JC	5680334
Surr: 4-Bromofluorobenzene	96.6		% 74-125		1	12/21/10 23:02	JC	5680334
Surr: Toluene-d8	101		% 82-118		1	12/21/10 23:02	JC	5680334

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-3 **Collected:** 12/17/2010 12:00 **SPL Sample ID:** 10120639-03

Site: Aztec,NM

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY					**MCL**	**E300.0**	**Units: mg/L**	
Chloride	64.8		5		10	12/19/10 12:04	ESK	5678076
Sulfate	1760		500		1000	12/19/10 13:09	ESK	5678080
METALS BY METHOD 6010B, DISSOLVED					**MCL**	**SW6010B**	**Units: mg/L**	
Manganese	0.41		0.005		1	12/23/10 14:17	EG	5683188

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	12/20/2010 17:00	M_W	1.00

TOTAL DISSOLVED SOLIDS					**MCL**	**SM2540 C**	**Units: mg/L**	
Total Dissolved Solids (Residue,Filterable)	2590		100		10	12/23/10 16:15	MM1	5683284
VOLATILE ORGANICS BY METHOD 8260B					**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	4		1		1	12/21/10 23:30	JC	5680335
Ethylbenzene	48		1		1	12/21/10 23:30	JC	5680335
Toluene	3.4		1		1	12/21/10 23:30	JC	5680335
m,p-Xylene	39		2		1	12/21/10 23:30	JC	5680335
o-Xylene	32		1		1	12/21/10 23:30	JC	5680335
Xylenes,Total	71		1		1	12/21/10 23:30	JC	5680335
Surr: 1,2-Dichloroethane-d4	93.9		%	70-130	1	12/21/10 23:30	JC	5680335
Surr: 4-Bromofluorobenzene	97.6		%	74-125	1	12/21/10 23:30	JC	5680335
Surr: Toluene-d8	99.7		%	82-118	1	12/21/10 23:30	JC	5680335

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-4 **Collected:** 12/17/2010 11:45 **SPL Sample ID:** 10120639-04

Site: Aztec,NM

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY					**MCL**	**E300.0**	**Units: mg/L**	
Chloride	2350		250		500	12/19/10 12:20	ESK	5678077
Sulfate	3570		500		1000	12/19/10 13:25	ESK	5678081
METALS BY METHOD 6010B, DISSOLVED					**MCL**	**SW6010B**	**Units: mg/L**	
Manganese	1.68		0.005		1	12/23/10 14:27	EG	5683189

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	12/20/2010 17:00	M_W	1.00

TOTAL DISSOLVED SOLIDS					**MCL**	**SM2540 C**	**Units: mg/L**	
Total Dissolved Solids (Residue,Filterable)	9400		100		10	12/23/10 16:15	MM1	5683285
VOLATILE ORGANICS BY METHOD 8260B					**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		1		1	12/21/10 23:59	JC	5680336
Ethylbenzene	ND		1		1	12/21/10 23:59	JC	5680336
Toluene	ND		1		1	12/21/10 23:59	JC	5680336
m,p-Xylene	ND		2		1	12/21/10 23:59	JC	5680336
o-Xylene	ND		1		1	12/21/10 23:59	JC	5680336
Xylenes,Total	ND		1		1	12/21/10 23:59	JC	5680336
Surr: 1,2-Dichloroethane-d4	92.2		%	70-130	1	12/21/10 23:59	JC	5680336
Surr: 4-Bromofluorobenzene	92.9		%	74-125	1	12/21/10 23:59	JC	5680336
Surr: Toluene-d8	102		%	82-118	1	12/21/10 23:59	JC	5680336

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID Duplicate **Collected:** 12/17/2010 11:28 **SPL Sample ID:** 10120639-05

Site: Aztec,NM

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**		
Benzene	ND			1	1	12/22/10 0:28	JC	5680337
Ethylbenzene	ND			1	1	12/22/10 0:28	JC	5680337
Toluene	ND			1	1	12/22/10 0:28	JC	5680337
m,p-Xylene	ND			2	1	12/22/10 0:28	JC	5680337
o-Xylene	ND			1	1	12/22/10 0:28	JC	5680337
Xylenes,Total	ND			1	1	12/22/10 0:28	JC	5680337
Surr: 1,2-Dichloroethane-d4	93.4		%	70-130	1	12/22/10 0:28	JC	5680337
Surr: 4-Bromofluorobenzene	92.5		%	74-125	1	12/22/10 0:28	JC	5680337
Surr: Toluene-d8	99.7		%	82-118	1	12/22/10 0:28	JC	5680337

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID Trip Blank **Collected:** 12/17/2010 10:00 **SPL Sample ID:** 10120639-06

Site: Aztec,NM

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**		
Benzene	ND			1	1	12/21/10 22:04	JC	5680332
Ethylbenzene	ND			1	1	12/21/10 22:04	JC	5680332
Toluene	ND			1	1	12/21/10 22:04	JC	5680332
m,p-Xylene	ND			2	1	12/21/10 22:04	JC	5680332
o-Xylene	ND			1	1	12/21/10 22:04	JC	5680332
Xylenes,Total	ND			1	1	12/21/10 22:04	JC	5680332
Surr: 1,2-Dichloroethane-d4	93.3		%	70-130	1	12/21/10 22:04	JC	5680332
Surr: 4-Bromofluorobenzene	90.3		%	74-125	1	12/21/10 22:04	JC	5680332
Surr: Toluene-d8	95.7		%	82-118	1	12/21/10 22:04	JC	5680332

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Conoco Phillips

Randleman #1

Analysis: Metals by Method 6010B, Dissolved
Method: SW6010B
WorkOrder: 10120639
Lab Batch ID: 104030

Method Blank

RunID: ICP2_101223A-5683172 Units: mg/L
Analysis Date: 12/23/2010 12:35 Analyst: EG
Preparation Date: 12/20/2010 17:00 Prep By: M_ Method SW3005A

Analyte	Result	Rep Limit
Manganese	ND	0.005

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10120639-01B	MW-1
10120639-02B	MW-2
10120639-03B	MW-3
10120639-04B	MW-4

Laboratory Control Sample (LCS)

RunID: ICP2_101223A-5683173 Units: mg/L
Analysis Date: 12/23/2010 12:41 Analyst: EG
Preparation Date: 12/20/2010 17:00 Prep By: M_ Method SW3005A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Manganese	0.1000	0.09750	97.50	80	120

Post Digestion Spike (PDS) / Post Digestion Spike Duplicate (PDSD)

Sample Spiked: 10120638-03
RunID: ICP2_101223A-5683178 Units: mg/L
Analysis Date: 12/23/2010 13:12 Analyst: EG

Analyte	Sample Result	PDS Spike Added	PDS Result	PDS % Recovery	PDSD Spike Added	PDSD Result	PDSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Manganese	0.178	0.1	0.297	119.5	0.1	0.2996	122.1 *	0.8716	20	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 10120638-03
RunID: ICP2_101223A-5683175 Units: mg/L
Analysis Date: 12/23/2010 12:53 Analyst: EG
Preparation Date: 12/20/2010 17:00 Prep By: M_ Method SW3005A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Manganese	0.1775	0.1	0.3006	123.1	0.1	0.3040	126.5 *	1.125	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report 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.

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HOUSTON, TX 77054
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Quality Control Report

Conoco Phillips

Randleman #1

Analysis:	**Metals by Method 6010B, Dissolved**	**WorkOrder:**	**10120639**
Method:	**SW6010B**	**Lab Batch ID:**	**104030**

Qualifiers:

- ND/U - Not Detected at the Reporting Limit
- B - Analyte Detected In The Associated Method Blank
- J - Estimated Value Between MDL And PQL
- E - Estimated Value exceeds calibration curve
- MI - Matrix Interference
- D - Recovery Unreportable due to Dilution
- * - Recovery Outside Advisable QC Limits
- N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
- TNTC - Too numerous to count

QC results presented on the QC Summary Report 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.

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(713) 660-0901

Quality Control Report

Conoco Phillips

Randleman #1

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 10120639
Lab Batch ID: R313157

Method Blank

RunID: Q_101221E-5680324 Units: ug/L
Analysis Date: 12/21/2010 16:46 Analyst: JC

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	2.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,2-Dichloroethane-d4	100.2	70-130
Surr: 4-Bromofluorobenzene	90.2	74-125
Surr: Toluene-d8	97.1	82-118

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10120639-01A	MW-1
10120639-02A	MW-2
10120639-03A	MW-3
10120639-04A	MW-4
10120639-05A	Duplicate
10120639-06A	Trip Blank

Laboratory Control Sample (LCS)

RunID: Q_101221E-5680323 Units: ug/L
Analysis Date: 12/21/2010 16:17 Analyst: JC

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	20.0	20.6	103	74	123
Ethylbenzene	20.0	22.5	113	72	127
Toluene	20.0	21.8	109	74	126
m,p-Xylene	40.0	43.3	108	71	129
o-Xylene	20.0	22.6	113	74	130
Xylenes,Total	60.0	65.9	110	71	130
Surr: 1,2-Dichloroethane-d4	50.0	49	98.0	70	130
Surr: 4-Bromofluorobenzene	50.0	48.3	96.6	74	125
Surr: Toluene-d8	50.0	49.4	98.7	82	118

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 10120627-01
RunID: Q_101221E-5680327 Units: ug/L
Analysis Date: 12/21/2010 19:11 Analyst: JC

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report 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.

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HOUSTON, TX 77054
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Quality Control Report

Conoco Phillips

Randleman #1

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 10120639
Lab Batch ID: R313157

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	88.5	20	105	N/C	20	103	N/C	N/C	22	70	124
Ethylbenzene	22.0	20	40.3	91.6	20	41.7	98.4	3.34	20	76	122
Toluene	5.03	20	24.9	99.5	20	25.6	103	2.53	24	80	117
m,p-Xylene	8.29	40	49.3	102	40	50.4	105	2.19	20	69	127
o-Xylene	2.16	20	23.3	106	20	24.1	110	3.19	20	84	114
Xylenes,Total	10.5	60	72.6	104	60	74.5	107	2.51	20	69	127
Surr: 1,2-Dichloroethane-d4	ND	50	47.6	95.1	50	45.7	91.3	4.06	30	70	130
Surr: 4-Bromofluorobenzene	ND	50	47.7	95.4	50	48.1	96.2	0.856	30	74	125
Surr: Toluene-d8	ND	50	48	95.9	50	50.2	100	4.60	30	82	118

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report 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.

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8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Conoco Phillips

Randleman #1

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 10120639
Lab Batch ID: R313024

Method Blank

RunID: IC1_101219A-5678068 Units: mg/L
Analysis Date: 12/19/2010 9:55 Analyst: ESK

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10120639-02C	MW-2

Analyte	Result	Rep Limit
Chloride	ND	0.50
Sulfate	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC1_101219A-5678069 Units: mg/L
Analysis Date: 12/19/2010 10:11 Analyst: ESK

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	10.00	9.211	92.11	90	110
Sulfate	10.00	9.924	99.24	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 10120639-02
RunID: IC1_101219A-5678086 Units: mg/L
Analysis Date: 12/19/2010 15:34 Analyst: ESK

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	1418	5000	6522	102.1	5000	6523	102.1	0.01504	15	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report 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.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Conoco Phillips

Randleman #1

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 10120639
Lab Batch ID: R313024A

Method Blank

RunID: IC1_101219A-5678068 Units: mg/L
Analysis Date: 12/19/2010 9:55 Analyst: ESK

Analyte	Result	Rep Limit
Chloride	ND	0.50
Sulfate	ND	0.50

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10120639-01C	MW-1
10120639-02C	MW-2
10120639-03C	MW-3
10120639-04C	MW-4

Laboratory Control Sample (LCS)

RunID: IC1_101219A-5678069 Units: mg/L
Analysis Date: 12/19/2010 10:11 Analyst: ESK

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	10.00	9.211	92.11	90	110
Sulfate	10.00	9.924	99.24	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 10120639-01
RunID: IC1_101219A-5678073 Units: mg/L
Analysis Date: 12/19/2010 11:16 Analyst: ESK

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	93.48	50	146.4	105.9	50	143.9	100.8	1.759	15	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report 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.

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HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Conoco Phillips

Randleman #1

Analysis: Ion Chromatography
Method: E300.0

WorkOrder: 10120639
Lab Batch ID: R313024B

Method Blank

RunID: IC1_101219A-5678068 Units: mg/L
Analysis Date: 12/19/2010 9:55 Analyst: ESK

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10120639-01C	MW-1
10120639-03C	MW-3
10120639-04C	MW-4

Analyte	Result	Rep Limit
Chloride	ND	0.50
Sulfate	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC1_101219A-5678069 Units: mg/L
Analysis Date: 12/19/2010 10:11 Analyst: ESK

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	10.00	9.211	92.11	90	110
Sulfate	10.00	9.924	99.24	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 10120639-01
RunID: IC1_101219A-5678084 Units: mg/L
Analysis Date: 12/19/2010 15:01 Analyst: ESK

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	2103	5000	7122	100.4	5000	7245	102.8	1.719	15	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report 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.

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HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Conoco Phillips

Randleman #1

Analysis: Total Dissolved Solids
Method: SM2540 C

WorkOrder: 10120639
Lab Batch ID: R313321

Method Blank

RunID: WET_101223T-5683278 Units: mg/L
Analysis Date: 12/23/2010 16:15 Analyst: MM1

Analyte	Result	Rep Limit
Total Dissolved Solids (Residue,Filterable)	ND	10

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10120639-01C	MW-1
10120639-02C	MW-2
10120639-03C	MW-3
10120639-04C	MW-4

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: WET_101223T-5683280 Units: mg/L
Analysis Date: 12/23/2010 16:15 Analyst: MM1

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Total Dissolved Solids (Residue,Filterabl	200.0	202.0	101.0	200.0	199.0	99.50	1.5	10	95	107

Sample Duplicate

Original Sample: 10120639-04
RunID: WET_101223T-5683285 Units: mg/L
Analysis Date: 12/23/2010 16:15 Analyst: MM1

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Total Dissolved Solids (Residue,Filterabl	9400	9430	0.319	10

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report 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.

Sample Receipt Checklist

And

Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	**10120639**	Received By:	**T_B**
Date and Time Received:	**12/18/2010 10:30:00 AM**	Carrier name:	**Fedex-Priority**
Temperature:	**3.5°C**	Chilled by:	**Water Ice**

1.	**Shipping container/cooler in good condition?**	Yes	☑	No	☐	Not Present ☐
2.	**Custody seals intact on shippping container/cooler?**	Yes	☐	No	☐	Not Present ☑
3.	**Custody seals intact on sample bottles?**	Yes	☐	No	☐	Not Present ☑
4.	**Chain of custody present?**	Yes	☑	No	☐	
5.	**Chain of custody signed when relinquished and received?**	Yes	☑	No	☐	
6.	**Chain of custody agrees with sample labels?**	Yes	☑	No	☐	
7.	**Samples in proper container/bottle?**	Yes	☑	No	☐	
8.	**Sample containers intact?**	Yes	☑	No	☐	
9.	**Sufficient sample volume for indicated test?**	Yes	☑	No	☐	
10.	**All samples received within holding time?**	Yes	☑	No	☐	
11.	**Container/Temp Blank temperature in compliance?**	Yes	☑	No	☐	
12.	**Water - VOA vials have zero headspace?**	Yes	☑	No	☐	VOA Vials Not Present ☐
13.	**Water - Preservation checked upon receipt (except VOA*)?**	Yes	☐	No	☐	Not Applicable ☑

***VOA Preservation Checked After Sample Analysis**

SPL Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

SPL, Inc.
Analysis Request & Chain of Custody Record

SPL Workorder No.: 303423

101 20639

page 1 of 2

Client Name: Tetra tech, inc
Address: 6121 indian school Rd NE #200
City: ABQ State: NM Zip: 87110
Phone/Fax: 505-237-8440
Client Contact: Kelly Blanchard Email: kelly.blanchard
Project Name/No.: Kandleman #1
Site Name:
Site Location: Aztec, NM
Invoice To: 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 Mn	Chloride, Sulfate, TDS						
MW-1	12-17-10	1128		X	W	V	40	1	3	X								
MW-1	12-17-10	1128		X	W	P	16	Na	1		X							
MW-1	12-17-10	1128		X	W	P	1	Na	1			X						
MW-2	12-17-10	1212		X	W	V	40	1	3	X								
MW-2	12-17-10	1212		X	W	P	16	Na	1		X							
MW-2	12-17-10	1212		X	W	P	1	Na	1			X						
MW-3	12-17-10	1200		X	W	V	40	1	3	X								
MW-3	12-17-10	1200		X	W	P	16	Na	1		X							
MW-3	12-17-10	1200		X	W	P	1	Na	1			X						
MW-4	12-17-10	1145		X	W	V	40	1	3	X								

Requested Analysis

SHORT HOLD

Client/Consultant Remarks: Please filter & preserve metals @ lab

Laboratory remarks:

Intact? ☐ Y ☐ N
Ice? ☐ Y ☐ N
Temp:

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):

	date	time	
1. Relinquished by Sampler: Cabin Brown	12-17-10	1300	2. Received by:
3. Relinquished by:			4. Received by:
5. Relinquished by:	12/18	10:20	6. Received by Laboratory: [signature]

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

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

SPL, Inc.
Analysis Request & Chain of Custody Record

SPL Workorder No.: 303449
10120639
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Client Name: Tetratech, inc
Address: 6121 Indian School Rd. NE #200
City: ABQ State: NM Zip: 87110
Phone/Fax: 505-237-8440
Client Contact: Kelly Blanchard Email: Kelly.Blanchard@tetratech.com
Project Name/No.: Randleman #1
Site Name:
Site Location: Aztec, NM
Invoice To: Ph:

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil A=air SL=sludge E=solid 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	dissolved Fe	Chlorides, TDS
MW-4	12.17.10	1145		X	W	P	16	N	1		X	X
MW-4	12-17-10	1145		X	W	P	1	N	1		X	X
duplicate	12-17-10	1128		X	W	V	40	1	3	X		
trip blank	12-17-10	1000		X	W	V	40	1	2	X		

Client/Consultant Remarks: Please filter & preserve metals @ lab.
Laboratory remarks:
Intact? ☐ Y ☐ N
Ice? ☐ Y ☐ N
Temp:

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):

	date	time	
1. Relinquished by Sampler:	12-17-10	1300	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	12/18	10:30	6. Received by Laboratory:

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

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