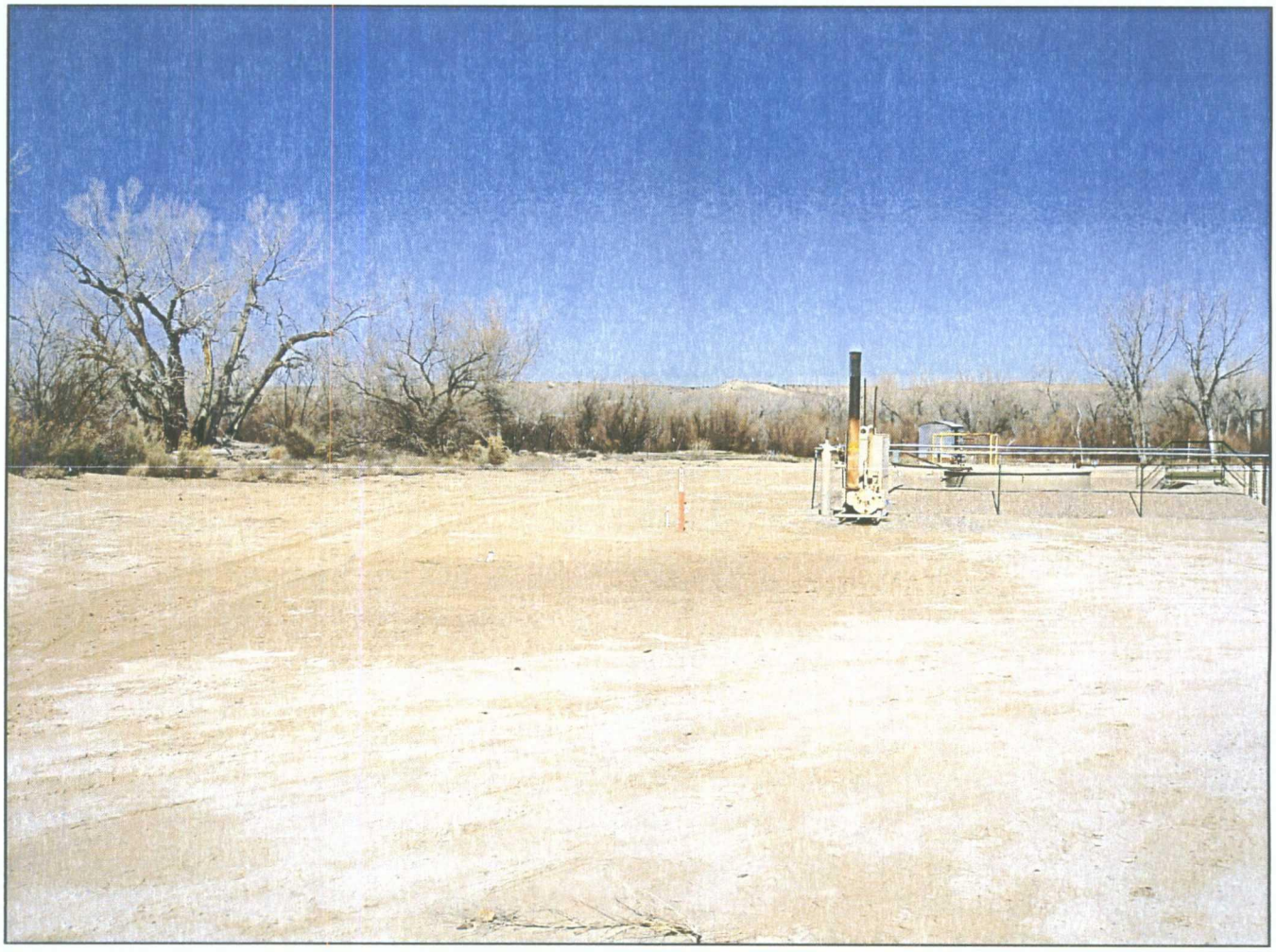
3R - 097

QUARTERLY REPORT (2nd QUARTER)

5/20/2008

QUARTERLY GROUNDWATER MONITORING REPORT
MARCH 2008 SAMPLING EVENT
CONOCOPHILLIPS
SHEPHARD & KELSEY #1
BLOOMFIELD, NM
OCD # 3R0097



ConocoPhillips

TETRA TECH, INC.

MAY 2008

QUARTERLY GROUNDWATER MONITORING REPORT MARCH 2008 SAMPLING EVENT

CONOCOPHILLIPS SHEPHARD & KELSEY #1 BLOOMFIELD, NEW MEXICO

OCD # 3R0097

Prepared for:

ConocoPhillips

420 South Keeler Avenue
Bartlesville, OK 74004

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Albuquerque, NM 87110
Tetra Tech Project No. 8690041.100

May 20, 2008

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QUARTERLY GROUNDWATER MONITORING REPORT CONOCOPHILLIPS SHEPHARD & KELSEY #1 BLOOMFIELD, NEW MEXICO

1.0 INTRODUCTION

This report presents the results of quarterly groundwater monitoring completed by Tetra Tech, Inc. (Tetra Tech) on March 17, 2008, at the ConocoPhillips Shephard & Kelsey #1 Site in Bloomfield, New Mexico. This event represents the eighth consecutive quarter of groundwater results meeting regulatory compliance at the site.

The site is located on the southwest side of Bloomfield, New Mexico, south of Highway 64 and the San Juan River. The site consists of an abandoned natural gas production well. All associated equipment and installations at the site have been removed. The location and general layout of the Shephard & Kelsey #1 site are shown on Figures 1 and 2, respectively.

1.1 Site History

The history of the ConocoPhillips Shepard and Kelsey #1 is outlined on Table 1 and discussed in more detail in the following paragraphs.

Preliminary Screening

In response to landowner concerns following a hydrocarbon release, a preliminary screen for hydrocarbon contamination was conducted in the area of a former unlined dehydrator pit and existing production tank used to store separator waste water. On September 30, 1996, two test holes were advanced with a hand auger to the shallow groundwater table located approximately 3.5 to 4 feet below ground surface (bgs). One test hole was advanced adjacent to the production tank and one at a presumed downgradient location. Samples collected from both test holes were below laboratory detection limits for benzene, toluene, ethylbenzene, xylenes (BTEX), and total petroleum hydrocarbons (TPH). On November 11, 1996, two additional test holes were advanced immediately adjacent to the production tank. Impacts were discovered in both the soil and groundwater on the northeast side of the tank.

Assessment and Remediation

Due to the proximity of the site to a residential water supply well, the San Juan River, and shallow depth to groundwater, the New Mexico Oil Conservation Division (NMOCD) directed that ConocoPhillips assess and remediate contaminated soils from the former pit. On February 13, 1997, 30 cubic yards of soil were excavated from the former separator pit area until delineation of contamination was achieved (to a practical extent due to site equipment placement); confirmatory samples were then collected.

Monitor Well Installation and Sampling

Subsequent to the remediation effort described above and at the request of the NMOCD, monitor well MW-1 was installed on February 19, 1997 in the down gradient portion of the excavated area. On March 20, 1997, groundwater samples were collected from MW-1 and analyzed for BTEX. Analytical results

indicated benzene contamination above the New Mexico Water Quality Control Commission (NMWQCC) standards in the area of the former separator pit. Monitor well MW-1 was sampled quarterly from March 1997 to September 1998, when sampling was discontinued.

Monitoring wells MW-NE, DG 1, SB-12, UG 1, UG 2, and DG-MW were subsequently installed at the site during the late 1990's. Per NMOCD direction, groundwater monitoring resumed in June 2001 with the sampling of monitor wells MW-NE, DG 1, SB-12, UG 1, UG 2, and DG-MW. Based on the June 2001 sample results, subsequent quarterly sampling events were limited to the sampling of MW-NE, DG-1 and SB-12. The quarterly sampling of monitor wells MW-NE and DG-1 was discontinued after these wells achieved eight consecutive quarters of results below NMWQCC standards upon completion of the October 2003 sampling event. Monitor wells MW-1, DG-MW, UG-1, UG-2, and DG-1 were sampled in August 2007; results were below NMWQCC standards confirming continued compliance.

Monitor well SB-12 was sampled quarterly until April 2004; the well was sampled in May and November 2005, at which time quarterly sampling resumed. The most recent quarterly sampling results for monitor well SB-12 are summarized below.

- **February 2006 sampling event:** Benzene was detected at a concentration of 7 micrograms per liter (µg/L). Ethylbenzene and xylenes were detected at concentrations of 4 µg/L and 12 µg/L, respectively.
- **May 2006 sampling event:** Benzene was detected at a concentration of 12 micrograms per liter (µg/L), which is slightly above the NMWQCC standard of 10 µg/L. Ethylbenzene and xylenes were detected at concentrations of 1 µg/L and 3 µg/L, respectively.
- **August and November 2006 sampling events:** No BTEX constituents were detected. All concentrations were lower than laboratory detection limits.
- **February 2007 sampling event:** Ethylbenzene and xylenes were detected at concentrations of 3 µg/L and 1 µg/L, respectively. Benzene and toluene were not detected.
- **May 2007 sampling event:** Ethylbenzene was detected at a concentration of 2 µg/L. Benzene, toluene, and xylenes were not detected.
- **August, November 2007 and January 2008 sampling events:** No BTEX constituents were detected. All concentrations were lower than laboratory detection limits.

The March 2008 sample collected from SB-12 represents the eighth consecutive quarter of results below the NMWQCC standards for the well, qualifying the site for no further action.

2.0 METHODOLOGY AND RESULTS

The following subsections describe the groundwater monitoring methodology and sampling analytical results.

2.1 Groundwater Monitoring Methodology

Groundwater Elevation Measurements

On March 17, 2008, groundwater elevation measurements were recorded in monitor wells DG-1, SB-12, UG-1, UG-2, DG-MW, and MW-1. A groundwater elevation measurement could not be taken from monitor well MW-NE due to damage to the casing. Groundwater elevation measurements for monitor wells UG-1 and DG-1 were not used in the formation of the contour map due to possible errors associated with broken casings. Table 2 presents the monitor well specifications and groundwater level data. A groundwater elevation contour map is presented in Figure 3.

Groundwater sampling

Groundwater samples were collected from monitor well SB-12 during this sampling event. Approximately 2 gallons of water, or three well volumes, were purged from the well before sampling. A 1.5-inch dedicated, clear, poly-vinyl, disposable bailer was used to collect the groundwater samples. The groundwater samples were contained in laboratory prepared bottles, packed on ice, and shipped with chain of custody documentation to Southern Petroleum Laboratory located in Houston, Texas. The samples were analyzed for the presence of BTEX using Environmental Protection Agency (EPA) Method 8260B.

2.2 Groundwater Sampling Analytical Results

The March 2008 analysis of groundwater collected shows concentrations of BTEX were below laboratory detection limits in monitor well SB-12. Table 3 presents the historical laboratory analytical results. The groundwater sampling field form is presented in Appendix A. The laboratory analytical report is included in Appendix B.

3.0 CONCLUSIONS

The March 17, 2008 sampling event represents the eighth consecutive quarter of results indicating concentrations of BTEX in monitor well SB-12 below NMWQCC standards. Because eight consecutive quarters of results below NMWQCC standards have been reached, Tetra Tech recommends the discontinuation of quarterly sampling at the site. If you have any questions or require additional information please contact Kelly Blanchard at Tetra Tech at 505-237-8440 or kelly.blanchard@tetratech.com.

FIGURES

FIGURE 1.
SITE LOCATION MAP
CONOCOPHILLIPS
SHEPHARD & KELSEY #1
Bloomfield, New Mexico

N

1/2

0 1 mile

☆=Approximate Site Location

TETRA TECH, INC.

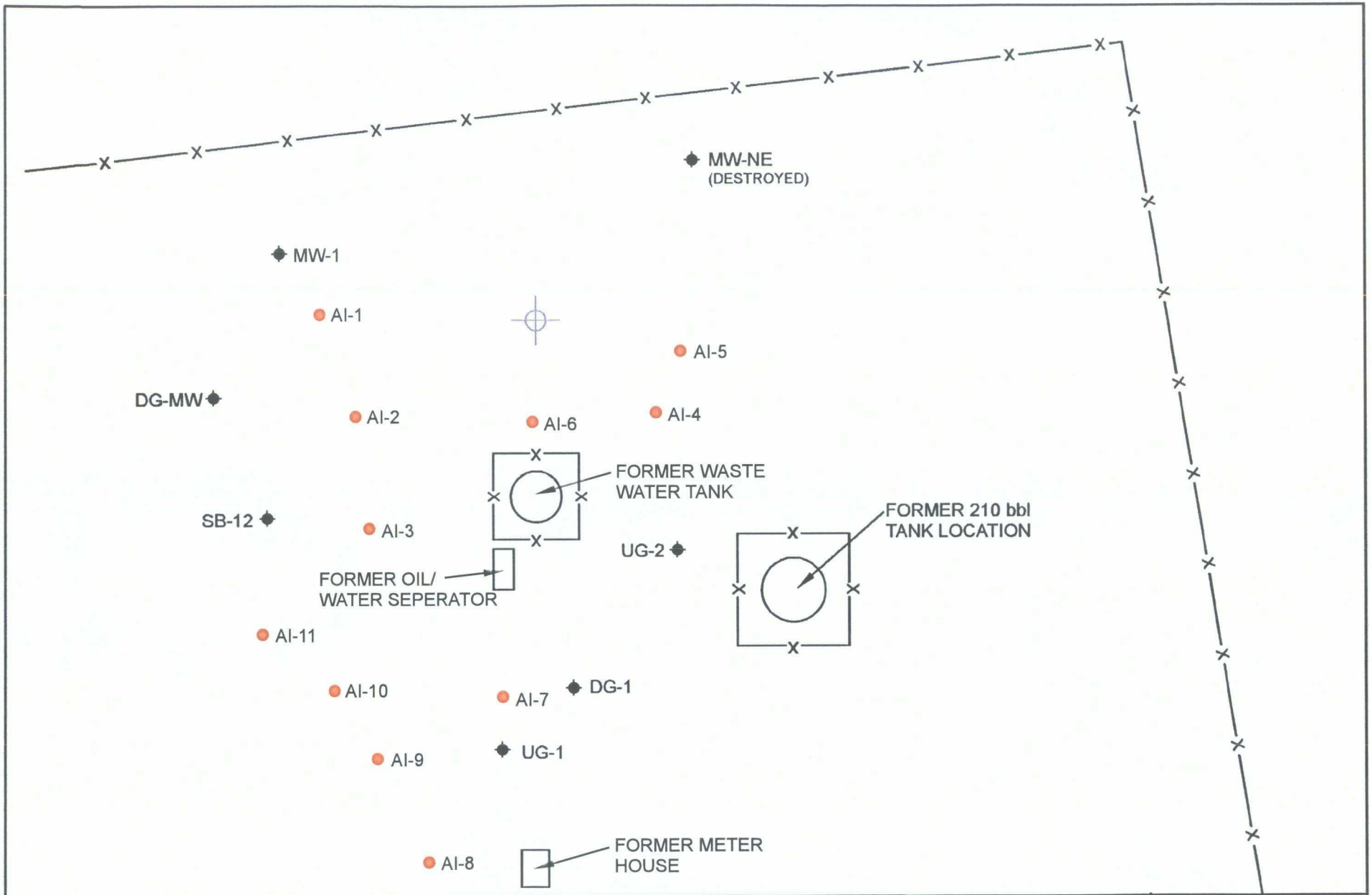

FIGURE 2:
SITE LAYOUT MAP
CONOCOPHILLIPS
SHEPHARD KELSEY #1

LEGEND

- SHEPHARD KELSEY #1 WELLHEAD (plugged and abandoned)
- MONITORING WELL
- AIR INJECTION WELL

N

0 Feet 50

TETRA TECH, INC.

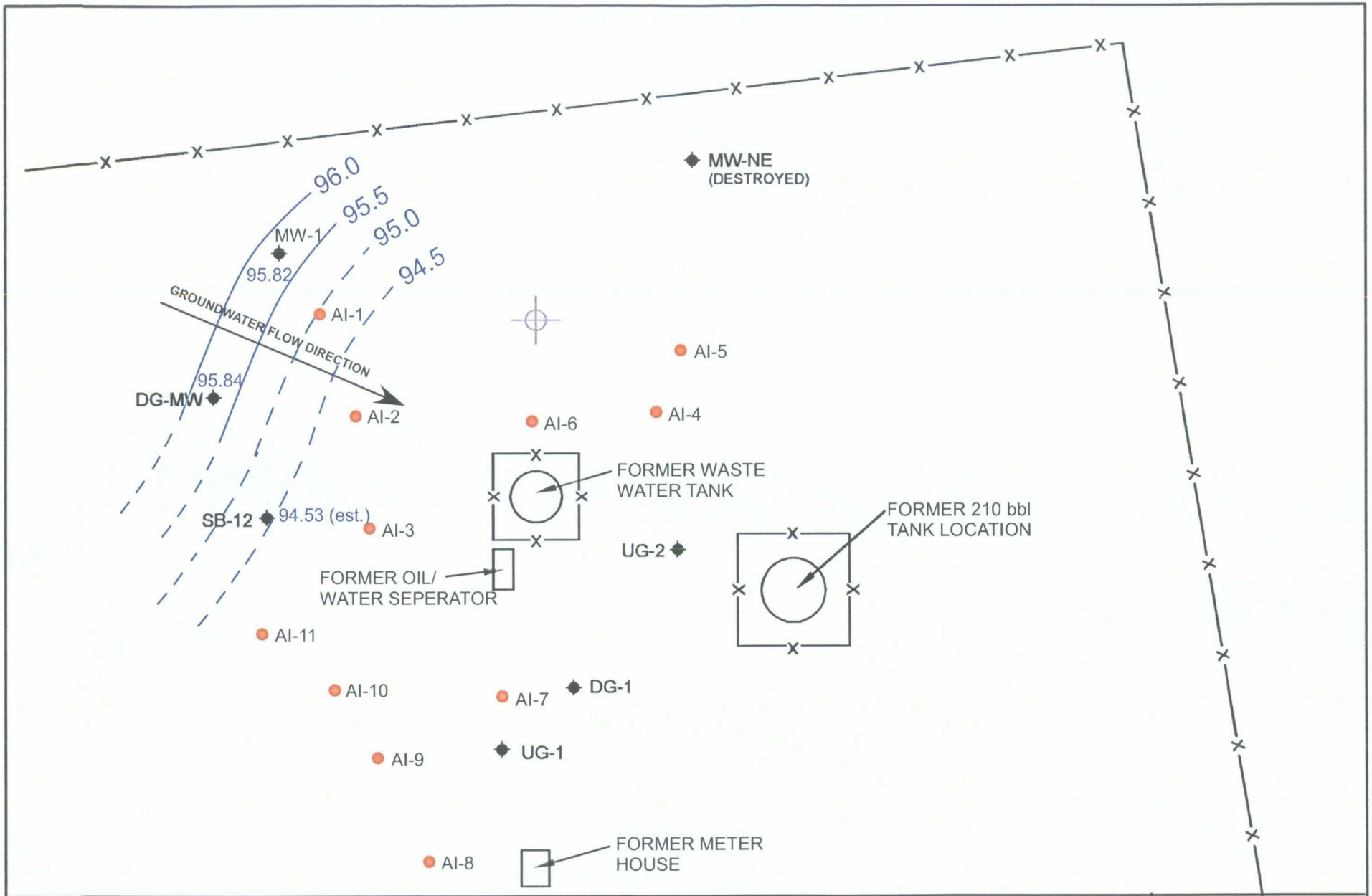

FIGURE 3:
GROUNDWATER ELEVATION
CONTOUR MAP (3/17/2008)
CONOCOPHILLIPS
SHEPHARD KELSEY #1

LEGEND

- SHEPHARD KELSEY #1 WELLHEAD (plugged and abandoned)
- MONITORING WELL
- AIR INJECTION WELL
- GROUNDWATER ELEVATION CONTOUR (INTERVAL 0.5FT.)
- (INFERRED)

N

0 Feet 50

TETRA TECH, INC.

TABLES

Table 1. Site History Timeline - ConocoPhillips Shephard and Kelsey #1

Date/Time Period	Event/Action	Description
September 1996	Release Suspected	Hydrocarbon release suspected in the area of a former unlined earthen pit and existing production tank; landowner concerns prompted initiation of a preliminary screen for hydrocarbon contamination
September 30, 1996	Preliminary Screen - Site Investigation	Two test holes advanced to shallow groundwater near production tank and at a downgradient location; samples collected; no hydrocarbon impacts to soil or groundwater detected
November 11, 1996		Two additional test holes advanced to shallow groundwater adjacent to production tank; samples collected; hydrocarbon impacts to soil and groundwater detected near the northeast side of tank
February 13, 1997	Soil Excavation	Approximately 30 cubic yards of soil was excavated from the former pit area until delineation of contamination was achieved; sample collected to confirm effective remediation
February 19, 1997	Monitor Well Installation	Monitor well MW-1 was installed
March 20, 1997 to September 14, 1998	Monitor Well Sampling	Monitor well MW-1 was sampled qarterly for BTEX; benzene detected above NMWQCC standards; subsequent results were below detection limit
1997 to 1998 time period	Monitor Well Installation and Sampling	Monitor wells MW-NE, DG-1, DG-MW, SB-12, UG-1, and UG-2 were installed and sampled; dates of installation and sampling history are unknown at this time
June 14, 2001	Monitor Well Sampling	Monitor wells MW-NE, DG-1, DG-MW, SB-12, UG-1, and UG-2 were sampled for BTEX
June 14, 2001 to October 6, 2003		Monitor wells MW-NE, DG-1, and SB-12 were sampled quarterly for BTEX
October 1, 2003	Geoprobe Investigation	Total of 23 Geoprobe borings advanced to shallow groundwater at selected locations of the site; BTEX and TPH soil contamination detected in the northern and western portions of the site
October 6, 2003	Partial Compliance Achieved	Results for monitor wells below NMWQCC standards except for SB-12; discontinue quarterly sampling in all wells except for SB-12
January 30, 2004 to April 26, 2004	Monitor Well Sampling	Monitor well SB-12 sampled quarterly for BTEX
May 10, 2005 and November 21, 2005		Monitor well SB-12 sampled for BTEX
August 20, 2007		Monitor wells MW-1, DG-MW, UG-1, UG-2, and DG-1 were sampled for BTEX; results were below NMWQCC standards confirming continued compliance
February 17, 2006 to March 17, 2008	Compliance Achieved	Monitor well SB-12 sampled quarterly for BTEX; 8 consecutive quarters with results below NMWQCC standards have been achieved

Table 2. Groundwater Elevation Summary (June 1996 - March 2008) - ConocoPhillips Shephard and Kelsey #1

Well ID	Total Depth (ft. bgs)	Screen Interval (ft)	Elevation[1] (ft.) (TOC)	Date Measured	Groundwater Level (ft TOC)	Relative Groundwater Elevation (ft TOC)
MW-NE	5.42	4	100	6/12/1996	2.54	97.46
				9/16/1997	NM	NC
				12/2/1997	2.31	97.69
				3/13/1998	2.19	97.81
				6/9/1998	2.12	97.88
				9/14/1998	3.28	96.72
				6/14/2001	6.40	93.60
				9/19/2001	7.62	92.38
				12/13/2001	6.86	93.14
				3/12/2002	6.53	93.47
				6/19/2002	7.40	92.60
				9/17/2002	7.01	92.99
				1/2/2003	NM	NC
				3/20/2003	6.01	93.99
				6/11/2003	6.87	93.13
				10/6/2003	6.84	93.16
				1/30/2004	6.27	93.73
				4/26/2004	6.01	93.99
				5/14/2007	destroyed	
DG-1	9.05	4	100.23	6/15/2001	6.15	94.08
				9/19/2001	6.57	93.66
				12/13/2001	6.49	93.74
				3/12/2002	6.23	94.00
				6/19/2002	6.88	93.35
				9/17/2002	6.75	93.48
				1/2/2003	NM	NC
				3/20/2003	5.69	94.54
				6/11/2003	6.75	93.48
				10/6/2003	6.54	93.69
				1/30/2004	5.95	94.28
				4/26/2004	4.78	95.45
				5/10/2005	5.55	94.68
				11/21/2005	5.95	94.94
				2/17/2006	5.84	94.39
				5/16/2006	5.90	94.33
				8/1/2006	6.73	93.50
				11/16/2006	5.45[4]	unknown
				2/21/2007	5.00[4]	unknown
				5/14/2007	4.89[4]	unknown
				8/20/2007	6.530	93.700
				11/6/2007	5.80[2]	unknown
				1/15/2008	4.94[2]	unknown
				3/17/2008	4.93[2]	unknown
MW-1	10.35	4	100.75	11/6/2007	5.87	94.88
				1/15/2008	5.40	95.35
				3/17/2008	4.93	95.82

Table 2. Groundwater Elevation Summary (June 1996 - March 2008) - ConocoPhillips Shephard and Kelsey #1

Well ID	Total Depth (ft. bgs)	Screen Interval (ft)	Elevation[1] (ft.) (TOC)	Date Measured	Groundwater Level (ft TOC)	Relative Groundwater Elevation (ft TOC)
DG-MW	5.42	4	100.67	6/15/2001	2.25	98.42
				10/6/2003	3.10	97.57
				1/30/2004	2.47	98.20
				4/26/2004	2.21	98.46
				could not locate		unknown
				8/20/2007	6.71	93.96
				11/6/2007	5.80	94.87
				1/15/2008	5.28	95.39
				3/17/2008	4.83	95.84
UG-1	9.83	4	100.49	6/14/2001	5.81	94.680
				3/12/2002	5.62	94.870
				6/19/2002	6.02	94.470
				9/17/2002	5.94	94.550
				1/2/2003	NM	NC
				3/20/2003	4.87	95.620
				6/11/2003	5.68	94.810
				10/6/2003	5.74	94.750
				1/30/2004	5.16	95.330
				4/26/2004	5.08	95.410
				5/10/2005	4.02[2]	unknown
				11/21/2005	5.00[2]	unknown
				2/17/2006	4.82[2]	unknown
				5/16/2006	5.15[2]	unknown
				8/1/2006	6.32[3]	unknown
				11/16/2006	5.35[4]	unknown
				2/21/2007	4.81[4]	unknown
				5/14/2007	4.84[4]	unknown
				8/20/2007	6.23	94.260
				11/6/2007	5.45[2]	unknown
				1/15/2008	5.50[2]	unknown
				3/17/2008	4.55[2]	unknown
UG-2	9.84	4	100.4	6/14/2001	4.99	95.41
				3/12/2002	6.19	94.21
				6/19/2002	5.14	95.26
				9/17/2002	5.09	95.31
				1/2/2003	NM	NC
				3/20/2003	4.21	96.19
				6/11/2003	4.91	95.49
				10/6/2003	4.91	95.49
				1/30/2004	4.45	95.95
				4/26/2004	4.37	96.03
				5/10/2005	5.79	94.61
				11/21/2005	5.42	95.81
				2/17/2006	5.33	95.07
				5/16/2006	5.13	95.27

Table 2. Groundwater Elevation Summary (June 1996 - March 2008) - ConocoPhillips Shephard and Kelsey #1

Well ID	Total Depth (ft. bgs)	Screen Interval (ft)	Elevation[1] (ft.) (TOC)	Date Measured	Groundwater Level (ft TOC)	Relative Groundwater Elevation (ft TOC)
UG-2 (cont.)	9.84	4	100.4	8/1/2006	6.41	93.99
				11/16/2006	5.18[4]	unknown
				2/21/2007	4.71[4]	unknown
				5/14/2007	4.62[4]	unknown
				8/20/2007	6.37	94.03
				11/6/2007	5.65[2]	unknown
				1/15/2008	5.30[2]	unknown
				3/17/2008	4.78[2]	unknown
SB-12	11.31	4	100	6/14/2001	6.90	93.10
				9/19/2001	7.25	92.75
				12/13/2001	6.39	93.61
				3/12/2002	6.11	93.89
				6/19/2002	6.76	93.24
				9/17/2002	6.66	93.34
				1/2/2003	NM	NC
				3/20/2003	5.53	94.47
				6/11/2003	6.57	93.43
				10/6/2003	6.43	93.57
				1/30/2004	5.80	94.20
				4/26/2004	5.61	94.39
				5/10/2005	5.03	94.97
				11/21/2005	6.01	93.00
				2/17/2006	5.76	94.24
				5/16/2006	5.73	94.27
				8/1/2006	7.08	92.92
				11/16/2006	5.78[4]	unknown
				2/21/2007	6.40[4]	unknown
				5/14/2007	5.32[4]	unknown
				8/20/2007	7.06	92.94
				11/6/2007	6.31	93.69
				1/15/2008	5.65[2]	unknown
				3/17/2008	5.47[2]	unknown

Explanation

bgs = below ground surface
ft = Feet
NC = Not calculated
NM = Not measured
TOC = Top of casing

[1] Elevation relative to MW-NE TOC
[2] Groundwater depth anomolous due to broken casing
[3] Casing has been repaired and extended
[4] Casing has been repaired and cut down

Table 3. Groundwater Analytical Data Summary (March 1997 - March 2008) - ConocoPhillips Shephard and Kelsey #1

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)
MW-1	3/20/1997	50.3	10.2	6.3	43.9
	6/12/1997	BDL	BDL	BDL	BDL
	9/16/1997	BDL	BDL	BDL	BDL
	12/5/1997	BDL	BDL	BDL	BDL
	3/13/1998	BDL	BDL	BDL	BDL
	6/9/1998	BDL	BDL	BDL	BDL
	9/14/1998	BDL	BDL	BDL	BDL
	8/20/2007	<0.5	<0.7	<0.8	<0.8
DG-MW	6/15/2001	BDL	BDL	BDL	BDL
	10/6/2003	BDL	BDL	BDL	BDL
	8/20/2007	<0.5	<0.7	0.9	7
UG-1	6/14/2001	BDL	BDL	BDL	BDL
	8/20/2007	<0.5	<0.7	<0.8	<0.8
UG-2	6/14/2001	BDL	BDL	BDL	BDL
	8/20/2007	<0.5	<0.7	<0.8	<0.8
MW-NE	6/15/2001	9.6	BDL	8.3	1.9
	9/19/2001	24	0.7	18	26.5
	12/13/2001	10	BDL	6	4.7
	3/12/2002	25	BDL	24	32
	6/19/2002	12	BDL	5.9	5.4
	9/17/2002	13	BDL	11	10.8
	3/20/2003	5.8	1.9	12	4.7
	6/11/2003	2.3	0.8	3.1	2.8
	10/6/2003	5	BDL	3.6	2.3
DG-1	6/15/2001	BDL	BDL	54	285
	9/19/2001	BDL	BDL	BDL	BDL
	12/13/2001	BDL	BDL	BDL	BDL
	3/12/2002	BDL	BDL	BDL	BDL
	6/19/2002	BDL	BDL	BDL	BDL
	9/17/2002	BDL	BDL	BDL	BDL
	3/20/2003	BDL	BDL	BDL	BDL
	6/11/2003	BDL	BDL	BDL	BDL
	10/6/2003	BDL	BDL	BDL	BDL
	8/20/2007	<0.5	<0.7	<0.8	<0.8

Table 3. Groundwater Analytical Data Summary (March 1997 - March 2008) - ConocoPhillips Shephard and Kelsey #1

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)
SB-12	6/14/2001	**42**	5.5	72	370
	9/19/2001	**111**	BDL	120	**810**
	12/13/2001	**28**	BDL	63	322.9
	3/12/2002	**64**	BDL	56	211.4
	6/19/2002	**130**	BDL	76	380
	9/17/2002	**40**	BDL	51	245.1
	3/20/2003	**53**	10	41	213
	6/11/2003	**370**	BDL	19	53.8
	10/6/2003	6.1	BDL	30	182
	1/30/2004	**12**	BDL	16	74.2
	4/26/2004	**45**	BDL	21	100
	5/10/2005	**24**	<0.7	18	140
	11/21/2005	<0.5	<0.7	14	68
	2/17/2006	7	<0.7	4	12
	5/16/2006	**12**	<0.7	1	3
	8/1/2006	<0.5	<0.7	<0.8	<0.8
	11/16/2006	<0.5	<0.7	<0.8	<0.8
	2/21/2007	<0.5	<0.7	3	1
	5/14/2007	<0.5	<0.7	2	<0.8
	8/20/2007	<0.5	<0.7	<0.8	<0.8
	11/6/2007	<0.5	<0.7	<0.8	<0.8
	1/15/2008	<0.5	<0.5	<0.5	<0.5
	3/17/2008	<0.5	<0.5	<0.5	<0.5
NMWQCC Standards		**10 (µg/L)**	**750 (µg/L)**	**750 (µg/L)**	**620 (µg/L)**

Explanation

BDL = Below laboratory detection limits; detection limit not specified
<0.5 = Below laboratory detection limits
NMWQCC = New Mexico Water Quality Control Commission
µg/L = micrograms per liter (parts per billion)

APPENDIX A

Water Sampling Field Form

TETRA TECH, INC.

WATER SAMPLING FIELD FORM

Project Name: Shephard & Kelsey #1 — Page 1 of 1

Project No.: 1158690041

Site Location: Bloomfield, NM

Site/Well No.: SB-12 — Coded/ Replicate No.: — Date: 3/17/2008

Weather: cold — Time Sampling Began: 11:40 — Time Sampling Completed: 12:00

EVACUATION DATA

Description of Measuring Point (MP): Top of Casing

Height of MP Above/Below Land Surface: — MP Elevation: NA

Total Sounded Depth of Well Below MP: 12.3 feet — Water-Level Elevation: NA

Held: — Depth to Water Below MP: 5.47 feet — Diameter of Casing: 2 inches

Wet: — Water Column in Well: 6.83 feet — Gallons Pumped/Bailed Prior to Sampling: 3.3

Gallons per Foot: 0.16

Gallons in Well: 1.09 — Sampling Pump Intake Setting (feet below land surface): NA

Purging Equipment: Dedicated disposable polyethylene bailer

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (C°)	pH	Conductivity	ORP (mV)	TDS (g/L)	DO %	DO (mg/L)
1122	**9.51**	**7.43**	**1113**	**-257.5**	**0.724**	**20.0**	**2.27**
1126	**9.68**	**7.43**	**1451**	**-224.2**	**0.943**	**34.0**	**3.83**
1130	**9.63**	**7.45**	**1478**	**-204.1**	**0.961**	**46.0**	**5.15**

Sampling Equipment: Dedicated disposable polyethylene bailer

Constituents Sampled	Container Description	Preservative
BTEX	3 VOAs	HCl

Remarks:

Sampling Personnel: Mitchell Crooks and Ana Moreno

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 Report

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

Conoco, Inc.

Certificate of Analysis Number:

08030979

Report To:		Project Name:	COP Shepherd Kelsey #1
Tetra Tech EM, Inc.		Site:	Bloomfield, 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:	3/28/08
ph: (505) 881-3188	fax:		

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3/28/08

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, Inc.

Certificate of Analysis Number:

08030979

Report To:		Project Name:	COP Shepherd Kelsey #1
Tetra Tech EM, Inc.		Site:	Bloomfield, 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:	3/28/08
ph: (505) 881-3188	fax:		

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.

Results for soils are reported on a dry-weight basis.

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.

Bethany Agarwal

3/28/08

Bethany A. Agarwal
Senior Project Manager

Date

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

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

Conoco, Inc.

Certificate of Analysis Number:

08030979

Report To:	Tetra Tech EM, Inc. Kelly Blanchard 6121 Indian School Road, N.E. Suite 200 Albuquerque NM 87110- ph: (505) 881-3188 fax: (505) 881-3283	**Project Name:**	COP Shepherd Kelsey #1
		Site:	Bloomfield, NM
		Site Address:	
		PO Number:	
		State:	New Mexico
		State Cert. No.:	
Fax To:		**Date Reported:**	3/28/08

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
SB-12	08030979-01	Water	3/17/08 12:00:00 PM	3/18/08 10:00:00 AM	278986	☐

Bethany Agarwal

3/28/08

Bethany A. Agarwal
Senior Project Manager

Date

Richard R. Reed
Laboratory Director

Ted Yen
Quality Assurance Officer

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

Client Sample ID: SB-12 **Collected:** 03/17/2008 12:00 **SPL Sample ID:** 08030979-01

Site: Bloomfield, 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		5	1	03/19/08 20:57	E_G	4336924
Ethylbenzene	ND		5	1	03/19/08 20:57	E_G	4336924
Toluene	ND		5	1	03/19/08 20:57	E_G	4336924
m,p-Xylene	ND		5	1	03/19/08 20:57	E_G	4336924
o-Xylene	ND		5	1	03/19/08 20:57	E_G	4336924
Xylenes,Total	ND		5	1	03/19/08 20:57	E_G	4336924
Surr: 1,2-Dichloroethane-d4	92.0		% 62-130	1	03/19/08 20:57	E_G	4336924
Surr: 4-Bromofluorobenzene	98.0		% 70-130	1	03/19/08 20:57	E_G	4336924
Surr: Toluene-d8	96.0		% 74-122	1	03/19/08 20:57	E_G	4336924

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - 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, Inc.

COP Shepherd Kelsey #1

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 08030979
Lab Batch ID: R231434

Method Blank

RunID: L_080319B-4336914 Units: ug/L
Analysis Date: 03/19/2008 11:49 Analyst: E_G
Preparation Date: 03/19/2008 11:49 Prep By: Method

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08030979-01A	SB-12

Analyte	Result	Rep Limit
Benzene	ND	5.0
Ethylbenzene	ND	5.0
Toluene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	94.0	62-130
Surr: 4-Bromofluorobenzene	98.0	70-130
Surr: Toluene-d8	98.0	74-122

Laboratory Control Sample (LCS)

RunID: L_080319B-4336913 Units: ug/L
Analysis Date: 03/19/2008 11:12 Analyst: E_G
Preparation Date: 03/19/2008 11:12 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	20.0	16.0	80.0	76	126
Ethylbenzene	20.0	17.0	85.0	67	122
Toluene	20.0	17.0	85.0	70	131
m,p-Xylene	40.0	35.0	87.5	72	150
o-Xylene	20.0	18.0	90.0	78	141
Xylenes,Total	60	53	88	72	150
Surr: 1,2-Dichloroethane-d4	50.0	47	94.0	62	130
Surr: 4-Bromofluorobenzene	50.0	50	100	70	130
Surr: Toluene-d8	50.0	49	98.0	74	122

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

Sample Spiked: 08030977-01
RunID: L_080319B-4336917 Units: ug/L
Analysis Date: 03/19/2008 13:04 Analyst: E_G

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - 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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Quality Control Report

Conoco, Inc.

COP Shepherd Kelsey #1

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 08030979
Method: SW8260B **Lab Batch ID:** R231434

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	ND	20	18.0	80.0	20	18.0	80.0	0	22	76	127
Ethylbenzene	ND	20	18.0	90.0	20	19.0	95.0	5.41	20	35	175
Toluene	ND	20	18.0	90.0	20	18.0	90.0	0	24	70	131
m,p-Xylene	ND	40	37.0	92.5	40	38.0	95.0	2.67	20	35	175
o-Xylene	ND	20	18.0	90.0	20	19.0	95.0	5.41	20	35	175
Xylenes,Total	ND	60	55	92	60	57	95	3.6	20	35	175
Surr: 1,2-Dichloroethane-d4	ND	50	48	96.0	50	47.0	94.0	2.11	30	62	130
Surr: 4-Bromofluorobenzene	ND	50	51	102	50	51.0	102	0	30	70	130
Surr: Toluene-d8	ND	50	48	96.0	50	49.0	98.0	2.06	30	74	122

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - 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
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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:	08030979	Received By:	BB
Date and Time Received:	3/18/08 10:00:00 AM	Carrier name:	Fedex-Standard Overnight
Temperature:	3.0°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.: 0803979 — 278986 — page ___ of

Client Name: Tetra Tech
Address: 6121 Indian School Rd NE
Phone/Fax: 505-237-8440 / 237-8656
Client Contact: Kelly Blanchard Email:
Project Name/No.: Shepherd + Kelsey #1
Site Name:
Site Location: Bloomfield, NM
Invoice To: Ph:

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil SL=sludge 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
SB-12	3/7/06	1200		X	W	V	40	1	3	X

Client/Consultant Remarks:

Laboratory remarks:

Intact? Y N
Ice? Y N
Temp: 3.5°C

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☒
48hr ☐
Other ☐

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

Special Detection Limits (specify):

PM review (initial): BA

	date	time	
1. Relinquished by Sampler:	3/7/06	1500	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	3/8/06	10:10	6. Received by Laboratory: Brenda Flam

☒ 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