

March 19, 2009

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9:53 am, Mar 23, 2009

Alameda County
Environmental Health

Mr. David Blain
BPS Reprographic Services
945 Bryant Street
San Francisco, CA 94103

RE: March 2009 Groundwater Monitoring Report
1700 Jefferson Street, Oakland, California
Fuel Leak Case No. RO 151
ERS Project No. 1015-01.00

Dear Mr. Blain:

Environmental Risk Specialties Corporation (ERS) has enclosed one hard copy of the March 2009 Groundwater Monitoring Report for 1700 Jefferson Street, Oakland, California. ERS will also upload the Report along with monitoring well sampling and analytical data to the Regional Water Quality Control Board's GeoTracker database.

If you have any questions regarding this report or the findings of the work, please contact me at (925) 938-1600, extension 109 or email me at ddement@erscorp.us.

Sincerely,



David DeMent, PG, REA II
Senior Geologist

cc: Ms. Barbara Jakub, Alameda County Health Care Services Agency

Enclosure

MARCH 2009

GROUNDWATER MONITORING

REPORT

1700 Jefferson Street
Oakland, California

Prepared for:
Mr. David Blain
BPS Reprographic Services
945 Bryant Street
San Francisco, CA 94103

Prepared by:
Environmental Risk Specialties Corporation
Walnut Creek, California

March 19, 2009

Reviewed By:



David DeMent, PG, REA II
Senior Geologist

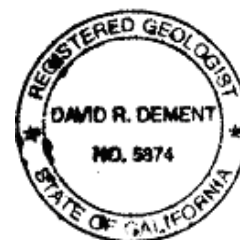


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1.0 INTRODUCTION

This March 2009 Groundwater Monitoring Report was prepared by Environmental Risk Specialties Corporation (ERS) at the request of BPS Reprographic Services (Client). This Report describes groundwater monitoring work performed at 1700 Jefferson Street, Oakland, California (Site). The project objectives were to purge and sample four existing groundwater monitoring wells, measure the depth to groundwater in all existing wells to calculate groundwater gradient and flow direction, evaluate analytical results, and report the findings.

2.0 BACKGROUND

The Site is located on the northeast corner of the intersection of Jefferson Street and 17th Street in Oakland, California. On June 16, 1987, three gasoline underground storage tanks (USTs) were removed from the Site and a suspect unauthorized release was confirmed. Three groundwater monitoring wells were installed in June 1987 and well MW-1 initially contained 30 inches of free-phase floating product (free product). Well MW-2 was subsequently destroyed when the current building was constructed. In January 1988, wells MW-1A and MW-4 were installed to specifically remove free product. In August 1988, offsite well MW-5 was installed.

Free product was removed from well MW-1 on a daily basis and an estimated 2,300 gallons of free product were removed from September 1987 to March 1991. Harding Lawson Associates (HLA) constructed a groundwater extraction and treatment system in June 1992 and by July 1999 removed an additional 867 gallons of free product. In April 1996, HLA installed well MW-6, and in March 1998, HLA advanced five Cone Penetrometer Test (CPT) borings south of the Site and north of well MW-5. In April 1998, HLA had free product samples analyzed and determined that free product was comprised of leaded gasoline. Free product has not been observed in the wells since 1999.

In 1999, MACTEC installed oxygen release compound (ORC®) socks in wells MW-1A, MW-3, MW-4, and MW-5. The ORC® socks were removed at the request of ACHCSA in 2002. Quarterly groundwater monitoring has been conducted since January 1994.

2.1 Subsurface Conditions

Soil boring logs from extraction wells MW-1A and MW-4, included in the February 2, 1990 *Aquifer Testing and Ground-water Treatment Cost Feasibility Study*, indicate that silty

sand and clayey sands is present from the surface to an approximately depth of 27.0 to 30.5 feet below ground surface (bgs). Sands were reported in well MW-4 from approximately 27.0 to 30.5 feet bgs. These soils were underlain by stiff to very stiff, saturated silty clays to the maximum explored depth of 33.0 feet bgs. Groundwater was encountered between 25.0 and 25.5 feet bgs.

3.0 GROUNDWATER MONITORING AND SAMPLING

Groundwater monitoring and sampling of the Site was performed on March 3, 2009 by ERS personnel. Work at the Site included measuring depth to water, subjectively evaluating groundwater in the wells, purging and sampling the wells using EPA approved low-flow techniques, and submitting the samples to a state-certified laboratory for analysis of constituents of concern.

3.1 Groundwater Monitoring

Before groundwater purging and sampling, the depth to the water table was measured from the top of each well casing using an electronic water level meter. The water level measurements were recorded to the nearest 0.01 foot with respect to mean sea level (MSL). Worksheets of recently recorded groundwater monitoring data are included as Appendix 1. Information regarding well elevations and groundwater depths for the Site is summarized in Table 1.

TABLE 1 – GROUNDWATER ELEVATIONS

Well Number	Date Measured	Well Elevation* (feet above MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-1	03/06/96	32.36	NS	---
	06/11/96	32.36	FP	---
	09/19/96	32.36	FP	---
	12/23/96	32.36	FP	---
	03/27/97	32.36	FP	---
	06/04/97	32.36	26.41	5.95
	09/26/97	32.36	26.80	5.56
	12/22/97	32.36	26.00	6.36
	03/31/98	32.36	26.06	6.30
	06/18/98	32.36	25.60	6.76
	08/28/98	32.36	25.45	6.91
	12/02/98	32.36	24.92	7.44
	03/10/99	32.36	24.90	7.46
	06/30/99	32.36	25.53	6.83
	09/29/99	32.36	24.23	8.13

Well Number	Date Measured	Well Elevation* (feet above MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-1 Cont.	11/22/99	32.36	24.33	8.03
	02/11/00	32.36	24.38	7.98
	05/30/00	32.36	23.57	8.79
	09/15/00	32.36	23.85	8.51
	11/16/00	32.36	24.14	8.22
	04/02/01	32.36	23.40	8.96
	06/28/01	32.36	23.58	8.78
	08/30/01	32.36	24.00	8.36
	12/26/01	32.36	24.18	8.18
	04/23/02	32.36	NA	---
	06/14/02	32.36	23.41	8.95
	08/20/02	32.36	23.85	8.51
	12/27/02	32.36	24.10	8.26
	04/01/03	32.36	23.75	8.61
	07/01/03	32.36	23.50	8.86
	09/24/03	32.36	23.82	8.54
	12/29/03	32.36	24.07	8.29
	05/18/04	32.36	23.64	8.72
	06/30/04	32.36	23.64	8.72
	09/23/04	32.36	23.98	8.38
	12/28/04	32.36	24.07	8.29
	03/16/05	32.36	23.80	8.56
	06/23/05	32.36	22.90	9.46
	09/09/05	32.36	23.27	9.09
	12/02/05	32.36	23.75	8.61
	03/24/06	32.36	23.05	9.31
	06/29/06	32.36	22.56	9.80
	09/13/06	32.36	23.00	9.36
	12/27/06	32.36	23.47	8.89
	03/30/07	32.36	23.51	8.85
07/02/07	32.36	23.39	8.97	
10/02/07	32.36	23.87	8.49	
12/13/07	32.36	24.05	8.31	
03/26/08	32.36	23.56	8.80	
06/02/08	32.36	23.70	8.66	
03/03/09	32.36	24.31	8.05	
MW-3	03/06/96	31.77	24.79	6.98
	06/11/96	31.77	25.60	6.17
	09/19/96	31.77	26.09	5.68
	12/23/96	31.77	FP	---
	03/27/97	31.77	FP	---
	06/04/97	31.77	25.11	6.66
	09/26/97	31.77	25.41	6.36

Well Number	Date Measured	Well Elevation* (feet above MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-3 Cont.	12/22/97	31.77	24.91	6.86
	03/31/98	31.77	24.05	7.72
	06/18/98	31.77	23.71	8.06
	08/28/98	31.77	23.70	8.07
	12/02/98	31.77	23.60	8.17
	03/10/99	31.77	22.65	9.12
	06/30/99	31.77	23.07	8.70
	09/29/99	31.77	23.03	8.74
	11/22/99	31.77	23.68	8.09
	02/11/00	31.77	23.74	8.03
	05/30/00	31.77	22.97	8.80
	09/15/00	31.77	23.12	8.65
	11/16/00	31.77	23.40	8.37
	04/02/01	31.77	23.40	8.37
	06/28/01	31.77	23.17	8.60
	08/30/01	31.77	23.35	7.42
	12/26/01	31.77	23.54	8.23
	04/23/02	31.77	22.89	8.88
	06/14/02	31.77	22.85	8.92
	08/20/02	31.77	23.11	8.66
	12/27/02	31.77	23.34	8.43
	04/01/03	31.77	22.90	8.87
	07/01/03	31.77	22.80	8.97
	09/24/03	31.77	23.15	8.62
	12/29/03	31.77	23.45	8.32
	05/18/04	31.77	22.98	8.79
	06/30/04	31.77	23.04	8.73
	09/23/04	31.77	23.32	8.45
	12/28/04	31.77	28.71	3.06 ²
	03/16/05	31.77	23.70	8.07
	06/23/05	31.77	22.40	9.37
	09/09/05	31.77	22.63	9.14
	12/02/05	31.77	23.06	8.74
	03/24/06	31.77	22.57	9.20
	06/29/06	31.77	23.91	9.84
	09/13/06	31.77	22.35	9.42
12/27/06	31.77	22.82	8.95	
03/30/07	31.77	22.91	8.86	
07/02/07	31.77	22.88	8.89	
10/02/07	31.77	23.20	8.57	
12/13/07	31.77	23.40	8.37	
03/26/08	31.77	23.00	8.77	
06/02/08	31.77	23.08	8.69	

Well Number	Date Measured	Well Elevation* (feet above MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-3	03/03/09	31.77	23.78	7.99
MW-5	03/06/96	30.56	23.53	7.03
	06/11/96	30.56	23.78	6.78
	09/19/96	30.56	24.48	6.08
	12/23/96	30.56	24.83	5.73
	03/27/97	30.56	23.82	6.74
	06/04/97	30.56	23.92	6.64
	09/26/97	30.56	24.29	6.27
	12/22/97	30.56	24.02	6.54
	03/31/98	30.56	22.78	7.78
	06/18/98	30.56	22.51	8.05
	08/28/98	30.56	22.74	7.82
	12/02/98	30.56	23.16	7.40
	03/10/99	30.56	22.82	7.74
	06/30/99	30.56	22.41	8.15
	09/29/99	30.56	22.81	7.75
	11/22/99	30.56	22.88	7.68
	02/11/00	30.56	22.74	7.82
	05/30/00	30.56	21.73	8.83
	09/15/00	30.56	22.14	8.42
	11/16/00	30.56	22.39	8.17
	04/02/01	30.56	22.07	8.49
	06/28/01	30.56	22.15	8.41
	08/30/01	30.56	22.35	8.21
	12/26/01	30.56	22.49	8.07
	04/23/02	30.56	21.07	9.49
	06/14/02	30.56	21.80	8.76
	08/20/02	30.56	22.14	8.42
	12/27/02	30.56	NA ¹	NA ¹
	04/01/03	30.56	NA ¹	NA ¹
	07/01/03	30.56	NA ¹	NA ¹
	09/24/03	30.56	22.21	8.35
	12/29/03	30.56	22.56	8.00
	05/18/04	30.56	21.85	8.71
06/30/04	30.56	22.00	8.56	
09/23/04	30.56	22.36	8.20	
12/28/04	30.56	22.42	8.14	
03/16/05	30.56	22.11	8.45	
06/23/05	30.56	21.20	9.36	
09/09/05	30.56	21.68	8.88	
12/02/05	30.56	22.19	8.37	
03/24/06	30.56	21.01	9.55	
06/29/06	30.56	20.78	9.78	

Well Number	Date Measured	Well Elevation* (feet above MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-5 Cont.	09/13/06	30.56	21.35	9.21
	12/27/06	30.56	21.82	8.74
	03/30/07	30.56	21.70	8.86
	07/02/07	30.56	21.81	8.75
	10/02/07	30.56	22.22	8.34
	12/13/07	30.56	22.31	8.25
	03/26/08	30.56	21.77	8.79
	06/02/08	30.56	22.04	8.52
	03/03/09	30.56	22.51	8.05
MW-6	03/06/96	31.26	NA	---
	06/11/96	31.26	25.16	6.10
	09/19/96	31.26	25.76	5.50
	12/23/96	31.26	25.88	5.38
	03/27/97	31.26	24.78	6.48
	06/04/97	31.26	24.60	6.66
	09/26/97	31.26	24.80	6.46
	12/22/97	31.26	24.71	6.55
	03/31/98	31.26	23.75	7.51
	06/18/98	31.26	23.22	8.04
	08/28/98	31.26	22.23	9.03
	12/02/98	31.26	23.72	7.54
	03/10/99	31.26	23.54	7.72
	06/30/99	31.26	23.04	8.22
	09/29/99	31.26	23.42	7.84
	11/22/99	31.26	23.64	7.62
	02/11/00	31.26	23.67	7.59
	05/30/00	31.26	22.82	8.44
	09/15/00	31.26	23.10	8.16
	11/16/00	31.26	23.41	7.85
	04/02/01	31.26	23.33	7.93
	06/28/01	31.26	23.15	8.11
	08/30/01	31.26	23.35	7.91
	12/26/01	31.26	23.27	7.99
	04/23/02	31.26	22.89	8.37
	06/14/02	31.26	22.81	8.45
	08/20/02	31.26	23.15	8.11
	12/27/02	31.26	23.41	7.85
	04/01/03	31.26	23.16	8.10
	07/01/03	31.26	22.75	8.51
09/24/03	31.26	23.16	8.10	
12/29/03	31.26	23.47	7.79	
05/18/04	31.26	22.87	8.39	
06/30/04	31.26	22.43	8.83	

Well Number	Date Measured	Well Elevation* (feet above MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-6 Cont.	09/23/04	31.26	23.30	7.96
	12/28/04	31.26	23.42	7.84
	03/16/05	31.26	23.60	7.66
	06/23/05	31.26	22.27	8.99
	09/09/05	31.26	22.55	8.71
	12/02/05	31.26	23.05	8.21
	03/24/06	31.26	22.50	8.76
	06/29/06	31.26	21.85	9.41
	09/13/06	31.26	22.31	8.95
	12/27/06	31.26	22.85	8.41
	03/30/07	31.26	22.88	8.38
	07/02/07	31.26	22.75	8.51
	10/02/07	31.26	23.17	8.09
	12/13/07	31.26	23.37	7.89
	03/26/08	31.26	22.97	8.29
	06/02/08	31.26	23.07	8.19
03/03/09	31.26	22.51	7.51	

Notes: All measurements are in feet

**Well elevation measured to top of casing*

NS = Not Sampled

FP = Free Product

NA = Not available

¹ = Data not available due to ORC socks in well

² = Data not available due to probable equipment malfunction or operator error

3.2 Groundwater Gradient

Groundwater elevation contours, as determined from monitoring well data obtained on March 3, 2009, are illustrated on Figure 3. Based on the measured groundwater elevations, calculated groundwater flow direction is to the west at an average gradient of 0.004 foot per foot. Historical groundwater gradients and flow directions are summarized in Table 2. Thirty-two of 35 calculated groundwater flow directions ranged from northwest to southwest and west was the predominant flow direction.

TABLE 2 - GROUNDWATER GRADIENT AND FLOW DIRECTION

Date Monitored	Gradient (foot/foot)	Direction
06/11/96	0.003	Southwest
06/04/97	0.009	Northwest
03/31/98	0.002	West
08/28/98	0.007	East
12/02/98	0.006	Northwest
03/10/99	0.011	Northwest
09/29/99	0.004	Northwest
02/11/00	0.001	Northwest
05/30/00	0.003	West
11/16/00	0.044	West
04/02/01	0.001	Southwest
06/28/01	0.005	Southwest
08/30/01	0.004	Southwest
04/23/02	0.006	West-Southwest
06/14/02	0.004	West- Southwest
08/20/02	0.005	West- Southwest
12/27/02	0.005	West- Southwest
04/01/03	0.007	West- Southwest
07/01/03	0.006	West-Northwest
09/24/03	0.005	West-Northwest
12/29/03	0.003	West-Northwest
05/18/04	0.006	West
06/30/04	0.002	North
09/23/04	0.005	West
12/28/04	0.045 ¹	Southeast ¹
03/16/05	0.010	Southwest
06/23/05	0.005	West
09/09/05	0.005	West
12/02/05	0.006	Northwest
03/24/06	0.006	Northwest
09/13/06	0.005	West-Northwest
12/13/07	0.004	West-northwest
03/26/08	0.004	West
06/02/08	0.004	West
03/03/09	0.004	West

Notes: ¹ MACTEC reported an error in groundwater measurement

3.3 Groundwater Sampling

Before groundwater sampling, each well was purged using EPA approved low-flow techniques summarized in the "Low-Flow (Minimal Drawdown) Ground Water Sampling Procedures" (EPA, 1996). Dedicated tubing, attached to a peristaltic pump, was lowered to the mid-point of the reported screen zone. The pump was set to a rate of less than 1 liter per minute and pH, dissolved oxygen (DO), specific conductance (SC), oxidation reduction potential (ORP), depth to water (DTW) and temperature were measured in three to five minute intervals within a flow-through cell. When parameters stabilized to within $\pm 10\%$ in consecutive readings, the pump rate was lowered, the tube was disconnected from the flow-through cell and samples were collected directly from the dedicated tubing. Groundwater conditions monitored during purging and sampling were recorded on monitoring wells worksheets, included as Appendix 1.

From each monitoring well, three laboratory-supplied 40-milliliter sample vials were filled to overflowing and sealed to eliminate trapped air. Once filled, sample vials were inverted and tapped to test for air bubbles. Sample containers were labeled with self adhesive, preprinted tags. The samples were stored in a pre-chilled, insulated container and returned to ERS's Walnut Creek Office pending courier pickup by AccuTest, a state-certified analytical laboratory, for the requested analyses.

Water purged during the development and sampling of the monitoring wells is being temporarily stored onsite in a 55-gallon drum pending laboratory analysis and proper disposal.

4.0 RESULTS OF GROUNDWATER SAMPLING

Groundwater samples collected from each well were submitted for analysis, following chain of custody protocol. Groundwater samples collected from wells MW-1, MW-3, MW-5, and MW-6 were analyzed for gasoline-range petroleum hydrocarbons (TPHg), benzene, toluene, ethylbenzene, total xylenes (BTEX), and methyl tertiary butyl ether (MTBE) by EPA Method 8260B. Copies of the chain of custody record and laboratory analytical reports are included as Appendix 2. TPHg, BTEX, and MTBE analytical results are summarized in Table 3.

TABLE 3 – GROUNDWATER ANALYTICAL RESULTS

Well Number	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Free Product (inches)
MW-1	07/08/87							30
	09/12/88							25
	07/12/89							21.6
	08/01/91							12
	09/30/92							
	03/30/93							
	01/13/94							14.8
	04/13/94							12
	06/29/94							0
	12/08/94							
	04/03/95							
	06/27/95							
	09/19/95							
	12/13/95							
	03/06/96							
	06/11/96							
	09/19/96							
	12/23/96							
	03/27/97							
	06/04/97	68,000	2,200	4,500	1,500	11,000	<500	
	09/26/97	59,000	6,000	3,000	1,600	8,600	<500	
	12/23/97	41,000	6,800	3,000	1,400	6,600	300	
	03/31/98	44,000	8,300	3,700	1,100	4,300	420	
	06/18/98	32,000	1,100	3,800	550	3,000	<50	
	08/28/98	26,000	8,600	2,300	730	2,100	<50	
	12/02/98	26,000	9,200	4,300	820	2,800	<50	
	03/10/99	26,000	8,200	5,900	870	3,500	<50	
	06/30/99	18,000	7,000	5,800	950	2,500	<25	
	09/29/99	21,000	9,200	10,000	1,200	5,500	<250	
	09/29/99	14,000	6,200	5,900	620	3,500	<250	
	11/22/99	24,000	4,900	5,000	730	3,500	<100	
	02/11/00	19,000	4,100	4,800	530	2,800	6.6	
05/30/00	19,000	5,700	8,400	730	3,500	<5.0		
09/15/00	20,000	4,100	5,700	540	2,700	<12		
11/16/00	18,000	3,500	4,300	640	3,200	<40		
04/02/01	19,000	4,700	5,200	570	2,600	50		
06/28/01	39,000	5,200	4,200	660	3,900	8.5		

Well Number	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Free Product (inches)
MW-1 (cont)	08/30/01	31,000	5,600	5,100	560	2,500	<100	
	12/26/01	34,000	5,300	5,200	630	2,400	<120	
	04/24/02	35,000	4,900	6,000	740	3,100	<120	
	06/14/02	35,000	5,400	6,800	870	3,500	<250	
	08/20/02	26,000	4,100	4,700	620	2,700	<120	
	12/27/02	28,000	4,500	5,000	660	3,000	<120	
	04/01/03	16,000	4,500	6,000	680	3,100	<120	
	07/01/03	61,000	7,700	11,000	1,200	6,700	<250	
	09/25/03	59,000	7,600	9,400	1,000	4,800	<1,200	
	12/29/03	46,000	6,600	7,900	960	4,000	<250	
	05/18/04	23,000	4,100	4,700	450	1,500	<50	
	06/30/04	24,000	3,500	3,600	390	1,300	<50	
	09/23/04	24,000	3,800	3,900	470	1,400	<25	
	12/28/04	22,000	3,400	3,400	380	1,400	<250	
	03/16/05	21,000	4,100	4,200	470	1,300	<50	
	06/23/05	30,000	5,400	5,500	520	1,900	<1,200	
	09/09/05	7,100	840	950	120	410	<120	
	12/02/05	19,000	3,600	3,500	410	1,300	<2.5	
	03/24/06	29,000	6,200	6,000	620	2,000	<500	
	06/29/06	23,000	4,800	4,000	330	1,200	<500	
	09/13/06	20,000	4,500	3,900	400	1,400	<250	
	12/27/06	31,000	6,000	5,300	710	2,500	<500	
	03/30/07	30,000	5,000	4,600	520	1,700	<500	
	07/02/07	14,000	2,500	2,000	280	930	<500	
	10/02/07	19,000	3,400	2,700	400	1,200	<500	
	12/13/07	18,000	3,500	2,700	390	1,100	<500	
	03/26/08	28,000	4,900	4,900	530	2,100	<500	
06/02/08	20,000	3,300	3,300	380	1,700	<500		
03/03/09	33,100	5,380	5,380	603	2,800	<100		
MW-3	07/08/87							
	09/12/88							
	07/12/89							
	08/01/91	74,000	1,600	4,600	670	4,300		4
	09/30/92							4.1
	03/30/93							1.3
	01/13/94							2.2
	04/13/94							1.8
	06/29/94	39,000	3,200	2,900	580	4,300		0.5
12/08/94	4,600,000	1,500	4,200	6,000	95,000			

Well Number	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Free Product (inches)
MW-3 (cont)	04/03/95	51,000	1,100	2,300	580	4,800		
	06/27/95	20,000	270	550	190	1,700		
	09/19/95	6,200	70	140	68	500		
	12/13/95	19,000	220	480	140	1,700		
	03/06/96	7,000	120	170	49	440		
	06/11/96	16,000	170	270	68	1,500		
	09/19/96	6,000	45	30	15	300		
	12/23/96							
	03/27/97							
	06/04/97	85,000	8,500	13,000	2,400	16,000	<500	
	09/26/97	47,000	610	6,000	930	5,900	<100	
	12/23/97	32,000	640	5,300	800	5,900	<300	
	03/31/98	32,000	690	3,800	870	5,200	350	
	06/18/98	16,000	180	1,500	490	3,700	<25	
	08/28/98	17,000	84	1,100	430	3,800	<50	
	12/02/98	3,200	39	85	25	360	<50	
	03/10/99	9,600	86	540	250	2,300	<25	
	06/30/99	7,900	31	330	200	1,800	<25	
	09/29/99	5,000	120	340	230	1,300	10	
	09/29/99	4,100	180	340	130	580	14	
	11/22/99	3,100	6.5	33	27	260	<1.0	
	02/11/00	540	8.3	20	2.4	28	31	
	05/30/00	490	11	5.6	0.45	17	<5.0	
	09/15/00	1,500	28	14	2.6	160	<5.0	
	11/16/00	1,300	20	34	25	28	<5.0	
	04/02/01	170	9	6.2	1.4	8.1	77	
	06/28/01	4,900	150	240	38	160	<2	
	08/30/01	3,100	42	48	26	210	<1.2	
	12/26/01	950	8	5.2	1.1	7	<0.5	
	04/24/02	300,000	11	4.8	0.72	1.4	<0.5	
	06/14/02	4,600	130	470	91	390	<0.5	
	08/20/02	4,900	330	170	40	150	<5.0	
	12/27/02	4,000	110	280	57	260	19	
04/01/03	5,900	370	150	44	230	<1.0		
07/01/03	12,000	200	460	130	390	<5.0		
09/25/03	10,000	150	300	120	280	<2.5		
12/29/03	7,300	160	250	79	210	<2.5		
05/18/04	1,500	77	72	19	59	<12		
06/30/04	2,000	81	37	34	40	<1.0		
09/23/04	3,400	140	95	36	40	<10		

Well Number	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Free Product (inches)
MW-3 (cont)	12/28/04	3,900	340	37	11	60	<5.0	
	03/16/05	970	1.4	1.8	0.66	2.9	<2.5	
	06/23/05	850	56	7.3	<5	12	<25	
	09/09/05	3,900	470	100	33	96	<62	
	12/02/05	760	14	8	2.4	17	<0.5	
	03/24/06	590	83	41	7.3	33	<12	
	06/29/06	1,100	130	38	16	21	<25	
	09/13/06	1,300	260	71	44	28	<25	
	12/27/06	3,000	250	160	49	140	<25	
	03/30/07	3,100	250	260	46	110	<25	
	07/02/07	2,600	250	250	54	130	<25	
	10/02/07	1,900	170	140	24	48	<25	
	12/13/07	2,900	250	170	66	120	<25	
	03/26/08	2,300	340	95	26	64	<25	
	06/02/08	2,300	270	250	59	130	<25	
	03/03/09	3,020	37.1	10	3.8 ^J	12.3 ^J	<10	
MW-5	07/08/87							
	09/12/88							0.5
	07/12/89							0.4
	08/01/91	120,000	20,000	14,000	1,900	4,900		0
	09/30/92	51,000	13,000	5,900	1,400	2,600		0
	03/30/93	74,000	16,000	5,000	1,800	2,700		0
	01/13/94	80,000	19,000	8,200	1,400	2,700		0
	04/13/94	63,000	14,000	3,500	1,500	2,100		0
	06/29/94	64,000	29,000	5,400	2,800	4,500		0
	12/08/94	59,000	13,000	3,800	1,800	2,900		
	04/03/95	51,000	15,000	2,200	2,800	4,500		
	06/27/95	41,000	12,000	2,100	1,400	1,600		
	09/19/95	50,000	1,600	2,700	2,000	2,100		
	12/13/95	45,000	13,000	2,100	16,000	1,900		
	03/06/96	51,000	15,000	2,800	2,000	2,400		
	06/11/96	48,000	12,000	2,900	2,000	2,700		
	09/19/96	48,000	12,000	4,500	2,300	4,000		
	12/23/96	45,000	12,000	2,200	2,700	6,500	600	
	03/27/97	44,000	11,000	1,100	1,900	2,800	300	
	06/04/97	35,000	8,900	560	1,500	1,700	<100	
09/26/97	36,000	7,900	270	1,500	1,300	<500		
12/23/97	39,000	13,000	500	1,900	1,700	<1,000		
03/31/98	48,000	10,000	400	2,000	2,200	350		

Well Number	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Free Product (inches)	
MW-5 (cont)	06/18/98	17,000	9,500	310	420	850	<10		
	08/28/98	16,000	5,400	160	1,100	900	<50		
	12/02/98	15,000	8,400	120	1,500	840	<50		
	03/10/99	23,000	14,000	300	1,800	1,100	<50		
	06/30/99	7,700	5,200	270	1,100	690	<25		
	09/29/99	11,000	9,600	710	1,100	1,100	<100		
	09/29/99	10,000	14,000	470	1,100	600	<100		
	11/22/99	30,000	11,000	3,400	1,500	2,500	<100		
	02/11/00	23,000	12,000	4,500	1,200	1,300	6.6		
	05/30/00	19,000	9,900	6,900	1,200	2,600	<200		
	09/15/00	24,000	3,800	3,000	460	1,200	<10		
	11/16/00	1,800	470	220	39	100	<5		
	04/02/01	15,000	7,400	3,000	1,000	2,200	<50		
	06/28/01	3,600	300	11	16	15	4.4		
	08/30/01	34,000	8,300	3,000	1,400	2,600	<50		
	12/26/01	1,900	300	110	55	120	<10		
	04/24/02	9,400	2,300	130	300	270	<50		
	06/14/02	1,700	110	<2.5	7.2	<2.5	<0.50		
	08/20/02	3,200	320	8.6	22	19	<0.50		
	12/27/02	6,200	2,200	140	160	250	<25		
	04/01/03								
	07/01/03								
	09/25/03	43,000	12,000	2,800	1,500	3,000	<1,200		
	12/29/03	26,000	7,700	1,900	910	210	<2.5		
	05/18/04	15,000	5,000	1,300	380	770	<50		
	06/30/04	18,000	5,700	1,600	540	1,200	<50		
	09/23/04	42,000	12,000	3,900	1,200	2,400	<120		
	12/28/04	41,000	10,000	3,800	1,000	2,300	<250		
	03/16/05	37,000	11,000	3,800	1,100	2,400	<120		
	06/23/05	27,000	7,700	1,700	680	1,300	<1,200		
	09/09/05	46,000	10,000	2,700	1,100	2,100	<1,200		
	12/02/05	21,000	5,900	1,500	600	1,200	<500		
03/24/06	<10,000	2,800	450	190	180	<500			
06/29/06	1,200	240	11	13	18	<2.5			
09/13/06	5,800	1,600	210	180	270	<120			
12/27/06	16,000	4,300	610	460	750	<500			
03/30/07	31,000	10,000	1,400	1,100	1,600	<500			
07/02/07	33,000	9,400	1,400	1,000	1,500	<500			
10/02/07	36,000	11,000	2,100	1,100	1,700	<620			
12/13/07	34,000	11,000	2,600	1,200	1,900	<1,200			

Well Number	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Free Product (inches)
MW-5 (cont)	03/26/08	28,000	7,700	1,900	860	1,300	<1,200	
	06/02/08	43,000	13,000	3,800	1,400	2,400	<1,200	
	03/03/09	43,400	11,700	3,560	1,290	2,200	<250	
MW-6	06/11/96	<50	<0.5	<0.5	<0.5	<2		
	09/19/96	<50	<0.5	<0.5	<0.5	<2		
	12/23/96	<50	<0.5	<0.5	<0.5	<2	<5	
	03/27/97	<50	<0.5	<0.5	<0.5	<2	<5	
	06/04/97	<50	<0.5	<0.5	<0.5	<2	<5	
	09/26/97	<50	<0.5	<0.5	<0.5	<2	<5	
	12/23/97	<50	<0.5	<0.5	<0.5	<2	<5	
	03/31/98	<50	<0.5	<0.5	<0.5	<2	<5	
	06/18/98	<50	<0.3	<0.3	<0.3	<0.6	<1.0	
	08/28/98	<50	<0.3	<0.3	<0.3	<0.6	<1.0	
	12/02/98	<50	<0.3	<0.3	<0.3	<0.6	<1.0	
	03/10/99	<50	<0.3	<0.3	<0.3	<0.6	<1.0	
	06/30/99	<50	<0.3	<0.3	<0.3	<0.6	<1.0	
	09/29/99	<50	<0.3	<0.3	<0.3	<0.6	<1.0	
	09/29/99	<50	<0.3	<0.3	<0.3	<0.6	<1.0	
	11/22/99	<50	<0.3	<0.3	<0.3	<0.6	<1.0	
	02/11/00	<50	<0.3	<0.3	<0.3	<0.6	<1.0	
	05/30/00	<50	<0.3	<0.3	<0.3	<0.6	<1.0	
	09/15/00	<50	<0.3	<0.3	<0.3	<0.6	<1.0	
	11/16/00	<50	<0.3	<0.3	<0.3	<0.3	<1.0	
	04/02/01	<50	<0.3	<0.3	<0.3	2.7	5	
	06/28/01	<50	<0.5	<0.5	<0.3	<0.5	17	
	08/30/01	<50	<0.5	<0.5	<0.3	8.7	<2.5	
	12/26/01	66	3.6	3.6	3.6	<0.5	<2.5	
	04/24/02	<50	<0.5	<0.5	<0.5	<0.5	<2.5	
	06/14/02	<50	<0.5	<0.5	<0.5	<0.5	<2.5	
	08/20/02	<50	<0.5	<0.5	<0.5	<0.5	<2.5	
	12/27/02	<50	<0.5	<0.5	<0.05	<0.5	<2.5	
	04/01/03	<50	<0.5	<0.5	<0.05	<0.5	<2.5	
07/01/03	<50	<0.5	<0.5	<0.05	<0.5	<2.5		
09/25/03	<50	<0.5	<0.5	<0.05	<0.5	<2.5		
12/29/03	<50	<0.5	<0.5	<0.05	<0.5	<2.5		
05/18/04	<50	<0.5	<0.5	<0.5	<0.5	<2.5		
06/30/04	<50	<0.5	<0.5	<0.5	<0.5	<2.5		
09/23/04	<50	<0.5	<0.5	<0.5	<0.5	<2.5		

Well Number	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Free Product (inches)
MW-6 (cont)	12/28/04	59	<0.5	<0.5	<0.5	1.6	<2.5	
	03/16/05	<50	<0.5	<0.5	<0.5	<0.5	<2.5	
	06/23/05	<50	<0.5	<0.5	<0.5	<0.5	<2.5	
	09/09/05	<50	<0.5	<0.5	<0.5	<0.5	<2.5	
	12/02/05	<50	<0.5	<0.5	<0.5	<0.5	<2.5	
	03/24/06	<50	<0.5	<0.5	<0.5	<0.5	<2.5	
	06/29/06	<50	<0.5	<0.5	<0.5	<0.5	<2.5	
	09/13/06	<50	<0.5	<0.5	<0.5	<0.5	<2.5	
	12/27/06	<50	<0.5	<0.5	<0.5	<0.5	<2.5	
	03/30/07	<50	<0.5	<0.5	<0.5	<0.5	<2.5	
	07/02/07	<50	<0.5	<0.5	<0.5	<0.5	<2.5	
	10/02/07	<50	<0.5	<0.5	<0.5	<0.5	<2.5	
	12/13/07	<50	<0.5	0.84	<0.5	<0.5	<2.5	
	03/26/08	<50	<0.5	<0.5	<0.5	0.88	<2.5	
	06/02/08	<50	<0.5	<0.5	<0.5	<0.5	<2.5	
	03/03/09	<50	<1.0	0.53 ^J	<1.0	<2.0	<1.0	

Notes: µg/L = micrograms per liter (approximately equivalent to ppb)

< = Concentration is below the reporting limit of the lab

J = Estimated value

5.0 DISCUSSION

During this groundwater monitoring and sampling event, the calculated groundwater flow direction was west at an average gradient of 0.004 foot per foot. Since March 1998, 32 of 35 calculated groundwater flow directions have ranged from northwest to southwest and calculated flow direction was west in 10 events. Historical groundwater flow direction and gradient are generally consistent with surface topography. During this sampling event, ERS used groundwater elevation data from wells MW-1, MW-3, MW-5, and MW-6 to calculate groundwater flow direction and gradient.

TPHg concentrations increased in wells MW-1, MW-3, and MW-5. BTEX concentrations increased in well MW-1 and decreased in wells MW-3 and MW-5. MTBE concentrations for wells MW-1, MW-3, MW-5, and MW-6 were not reported above laboratory reporting limits. TPHg and BTEX concentrations were not reported above laboratory reporting limits in well MW-6. In comparison to the June 2008 sampling event, TPHg concentrations generally increased in all wells, with the exception of well MW-6, which did not report TPHg concentrations above laboratory reporting limits.

Historical groundwater monitoring data and CPT grab groundwater sampling conducted in February 1998 suggest that an unknown source of petroleum hydrocarbon impact to groundwater exists in proximity to well MW-5. Evidence for this offsite source of impact adjacent to well MW-5 includes: 1) reported values of petroleum hydrocarbons impacts in groundwater are atypical of a release scenario from the former onsite USTs; 2) concentrations of TPHg and BTEX have been reported at higher concentrations in offsite well MW-5, located approximately 160 feet north of the former USTs, than in onsite wells, located immediately adjacent to the former UST excavation; 3) from June 1996 to March 2009, the predominant groundwater flow direction is west and ranges almost exclusively from northwest to southwest; 4) groundwater plume definition work performed in March 1998 demonstrated that offsite TPHg and BTEX impacts in 17th Street, Jefferson Street, and San Pablo Avenue were low to non-detect; and 5) no significant reduction in TPHg and BTEX concentrations in well MW-5 have been reported since 1996 despite significant onsite remediation and reduction in petroleum hydrocarbon concentrations in onsite wells.

Specifically, the highest benzene concentration historically reported in well MW-1 was 9,200 µg/L and the highest benzene concentration reported in well MW-5 was 29,000 µg/L. From June 1997 to May 2000, the average TPHg concentration in well MW-1 was 31,200 µg/L and the average TPHg in well MW-5 was 23,550 µg/L. During this same time frame, the average benzene concentration in well MW-1 was 6,250 µg/L and the average benzene concentration in well MW-5 was 9,914 µg/L. In other words, during these 14 periodic groundwater monitoring events, the benzene to TPHg ratio in well MW-1 (located adjacent to the former USTs) was 20 percent while the benzene to TPHg ratio in well MW-5 (located 160 feet north of the former USTs) was 42 percent. Similarly, during the last eight sampling events from December 2006 to March 2009, the benzene to TPHg ratio in well MW-1 was 17.6 percent while the benzene to TPHg ratio in well MW-5 was 29.5 percent. These ratios are contrary to what should be found in nature if the petroleum hydrocarbons reported in well MW-5 originated from the former onsite USTs. Hardling Lawson reported that the free product and groundwater treatment system operating at the Site removed approximately 1,000 gallons per day in 1992, approximately 191,880 gallons of water were treated and discharged to the sanitary sewer in 1994, and approximately 395,860 gallons of water were discharged in 1995. Significantly lower TPHg and BTEX concentrations in well MW-3 and generally non-detect analytical results in well MW-6 demonstrate that: 1) groundwater remediation conducted at the Site was effective at decreasing TPHg/BTEX impacts in groundwater; and 2) lateral petroleum hydrocarbon migration in groundwater is limited by low effective permeabilities in saturated zones under the Site. Lastly, if TPHg/BTEX concentrations originating from the former onsite USTs were responsible for the reported elevated TPHg/BTEX in well MW-5, then grab

groundwater samples collected in CPT soil borings CPT-3, 4, and 6 located only 80 to 120 feet further north of well MW-5 would have reported higher concentrations than 180 to 420 µg/L. TPHg impacts in well MW-5 ranged from 36,000 to 120,000 µg/L from August 1991 to March 1998 and benzene concentrations generally ranged from 11,000 to 20,000 µg/L during this timeframe; yet, a grab groundwater sample collected only 80 feet further north reported TPHg at 420 µg/L with almost no BTEX.

ERS generated iso-concentration contour maps for the interpolated distribution of TPHg and benzene in groundwater using Surfer® interpolation software. Figure 4 illustrates interpolated contours for TPHg and Figure 5 illustrates interpolated contours for benzene. Iso-concentrations maps suggest the Site is being impacted by an off-site source located near well MW-5. While interpolation programs are limited because attempting to honor limited data points can distort the data and inaccurately depict the distribution of the interpolated data, it is interesting to note that using well TPHg and benzene data also indicates the highest concentrations appear to originate in the vicinity of well MW-5.

Since the elevated concentrations of TPHg and BTEX reported in well MW-5 appear to originate from an unknown source, additional focused subsurface investigation could be performed to verify this conclusion and attempt to identify impacted soil and groundwater adjacent to well MW-5 and the “suspicious” concrete repair in the sidewalk next to MW-5.

6.0 CONCLUSIONS

Based on the results of groundwater monitoring performed at 1700 Jefferson Street, ERS has made the following conclusions:

- Calculated groundwater flow direction is to the west at an average gradient of 0.004 foot per foot and continues to be generally consistent with historical trends and regional topography;
- Reported TPHg concentrations have increased slightly in wells MW-1, MW-3, and MW-5, possibly as a result of recent precipitation in the area;
- Reported BTEX concentrations have increased in well MW-1 and decreased in wells MW-3 and MW-5;
- Consistent with recent trends, reported TPHg and BTEX concentrations were not reported above laboratory reporting limits in well MW-6;

- Reported TPHg and BTEX concentrations in well MW-5 over time suggest an offsite unknown source of petroleum hydrocarbon impact to groundwater in the general vicinity of this well; and
- Natural attenuation processes are continuing to degrade residual petroleum hydrocarbon concentrations in groundwater as evidenced by the relatively low TPHg and BTEX reported in well MW-3 and lack of detectable concentrations of TPHg and BTEX in downgradient well MW-6.

7.0 RECOMMENDATIONS

Based on current groundwater monitoring results and observations made during Site investigations, ERS recommends the following;

- Conduct a subsurface investigation to: (1) further characterize soil adjacent to the former UST excavation to help identify suspect sources of residual petroleum hydrocarbons that continue to impact groundwater in well MW-1; and (2) attempt to identify a potential offsite source that is impacting groundwater in the vicinity of well MW-5; and
- Five years of quarterly groundwater monitoring have established trends and future groundwater sampling in monitoring wells MW1, MW-3, MW-5, and MW-6 should be reduced to a semi-annual basis.

Therefore, the next tentatively scheduled groundwater monitoring event is September 3, 2009.

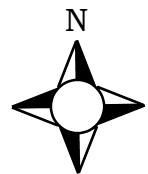
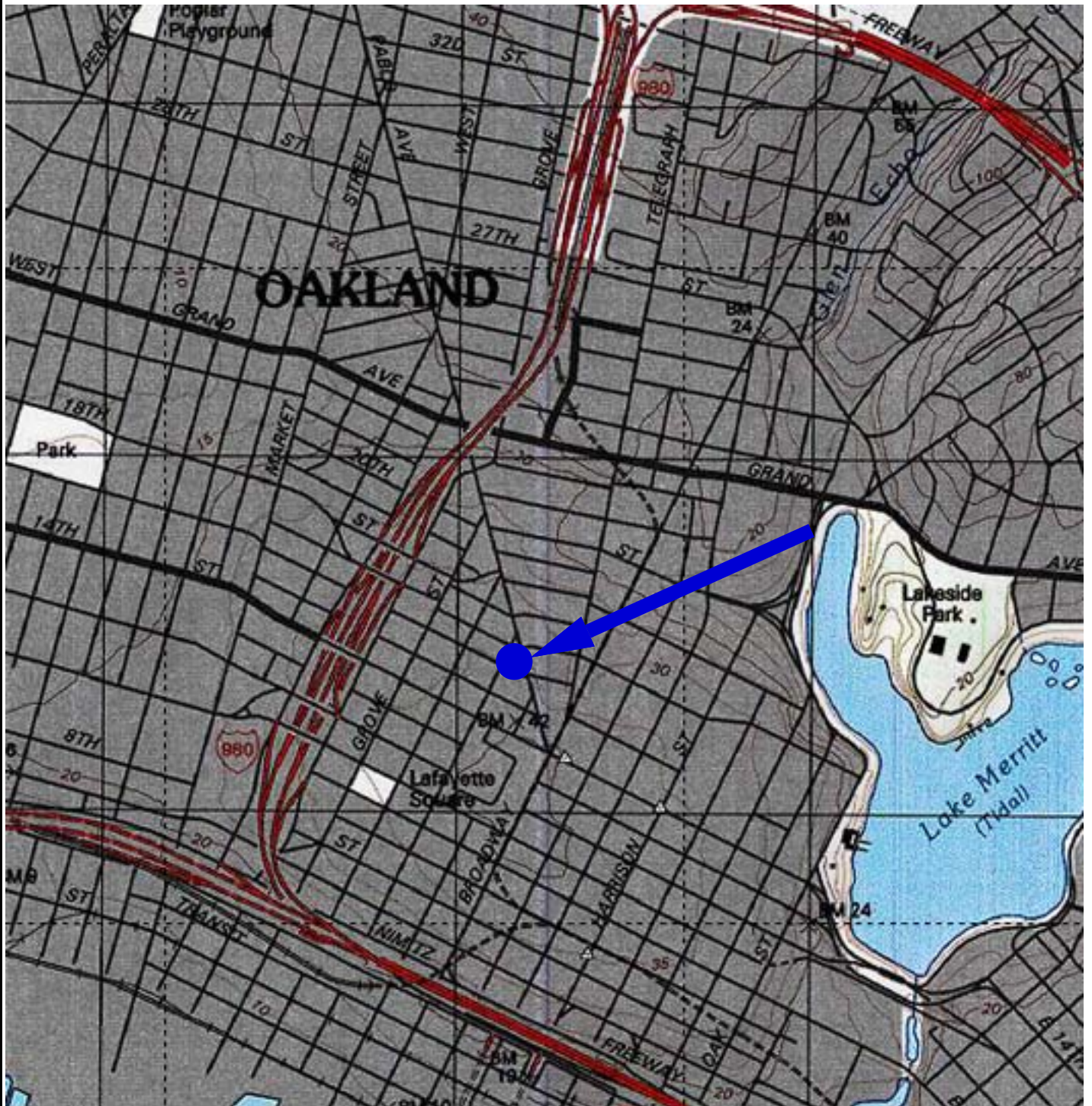
8.0 LIMITATIONS

The service performed by ERS has been conducted in a manner consistent with the levels of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area. No other warranty, expressed or implied, is made.

The conclusions presented in this report are professional opinions based on the indicated data described in this report and applicable regulations and guidelines currently in place. They are intended only for the purpose, site, and project indicated. Opinions and recommendations presented herein apply to site conditions existing at the time of our study.

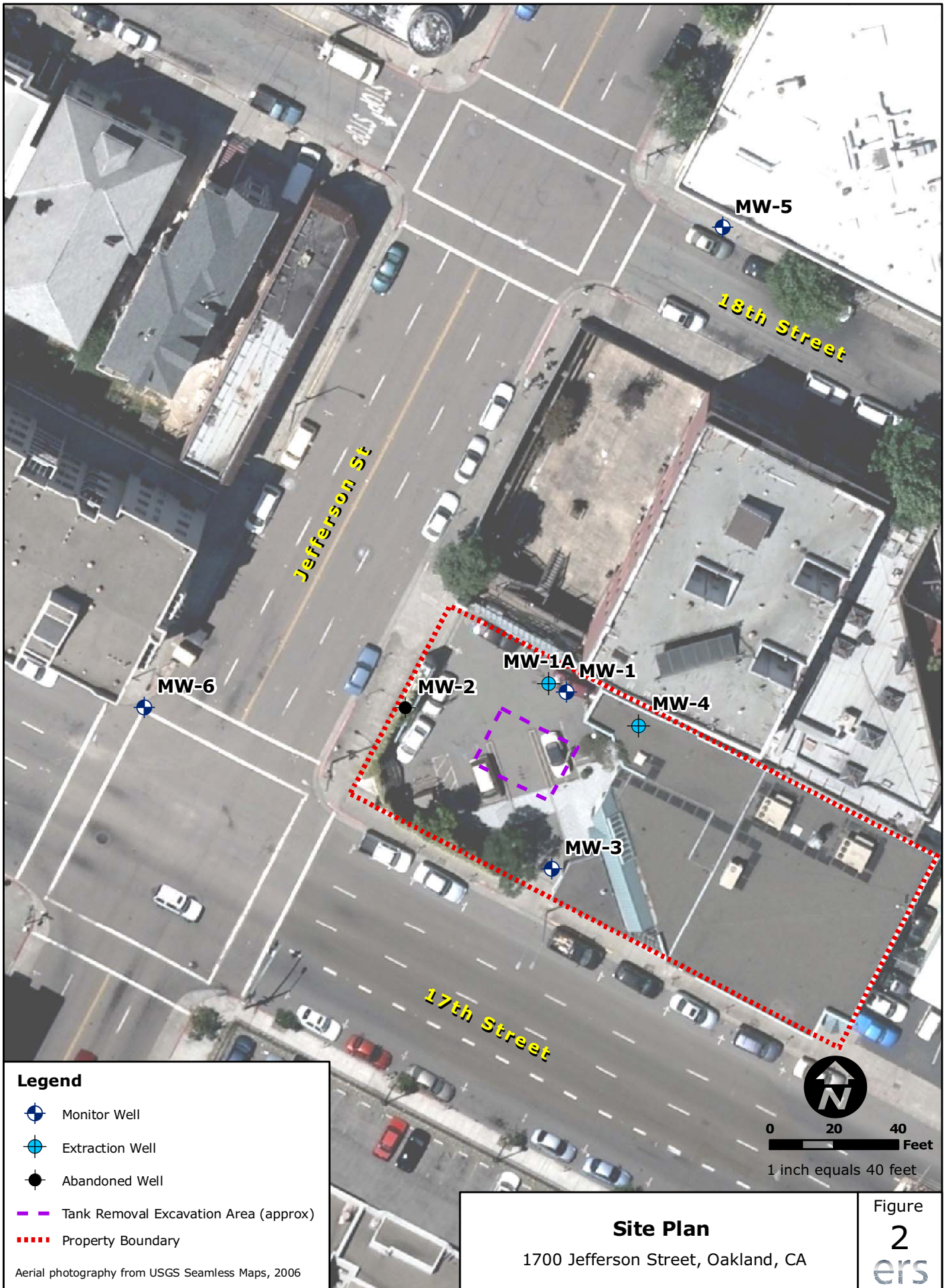
ERS has included analytical results from a state-certified laboratory, which performs analyses according to procedures suggested by the U.S. Environmental Protection Agency and the State of California. ERS is not responsible for laboratory errors in procedure or result reporting.

FIGURES



Location Map
1700 Jefferson Street
Oakland, California
Source: National Geographic TOPO!

Figure
1
ers



Legend

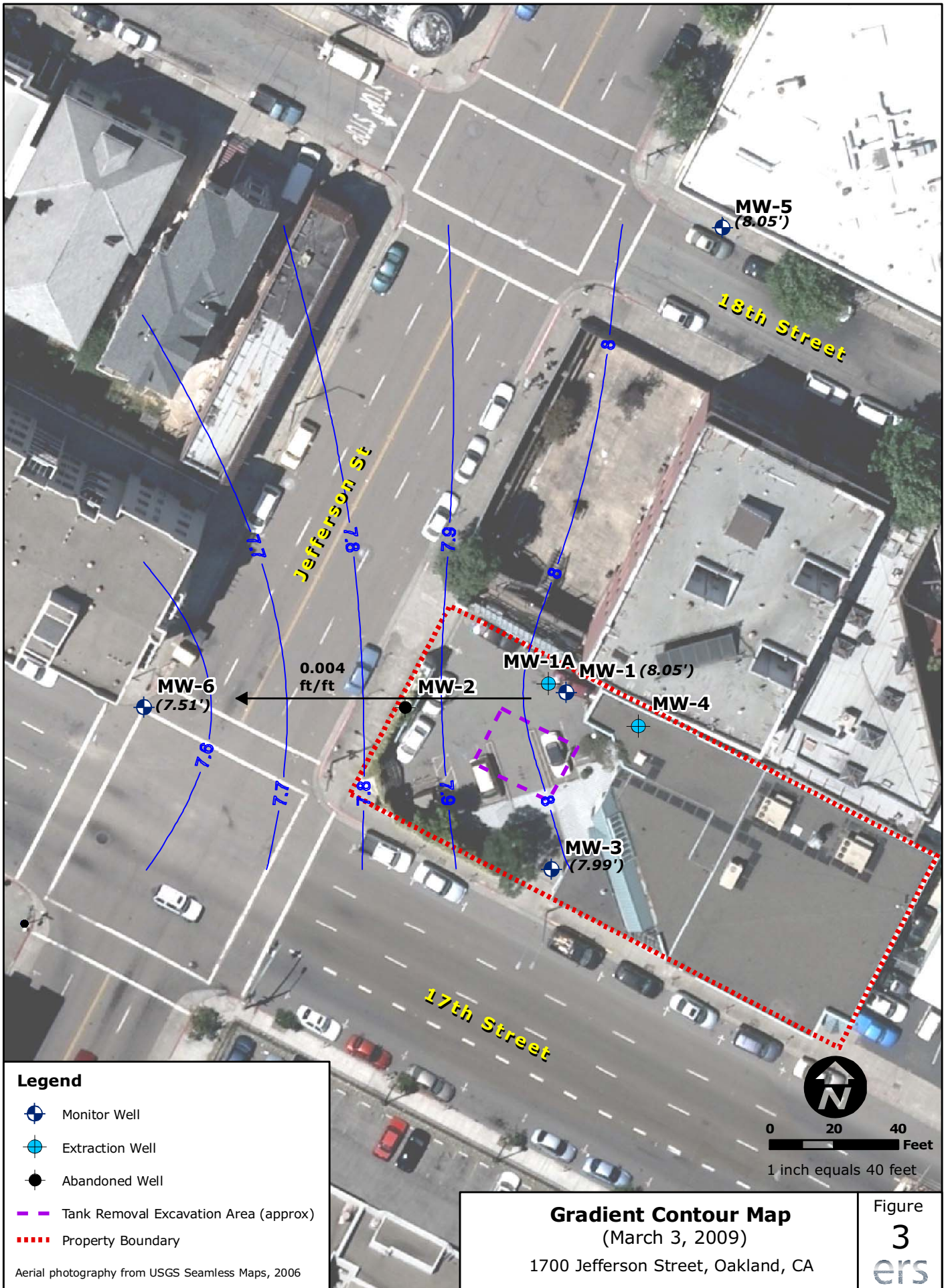
- Monitor Well
- Extraction Well
- Abandoned Well
- Tank Removal Excavation Area (approx)
- Property Boundary

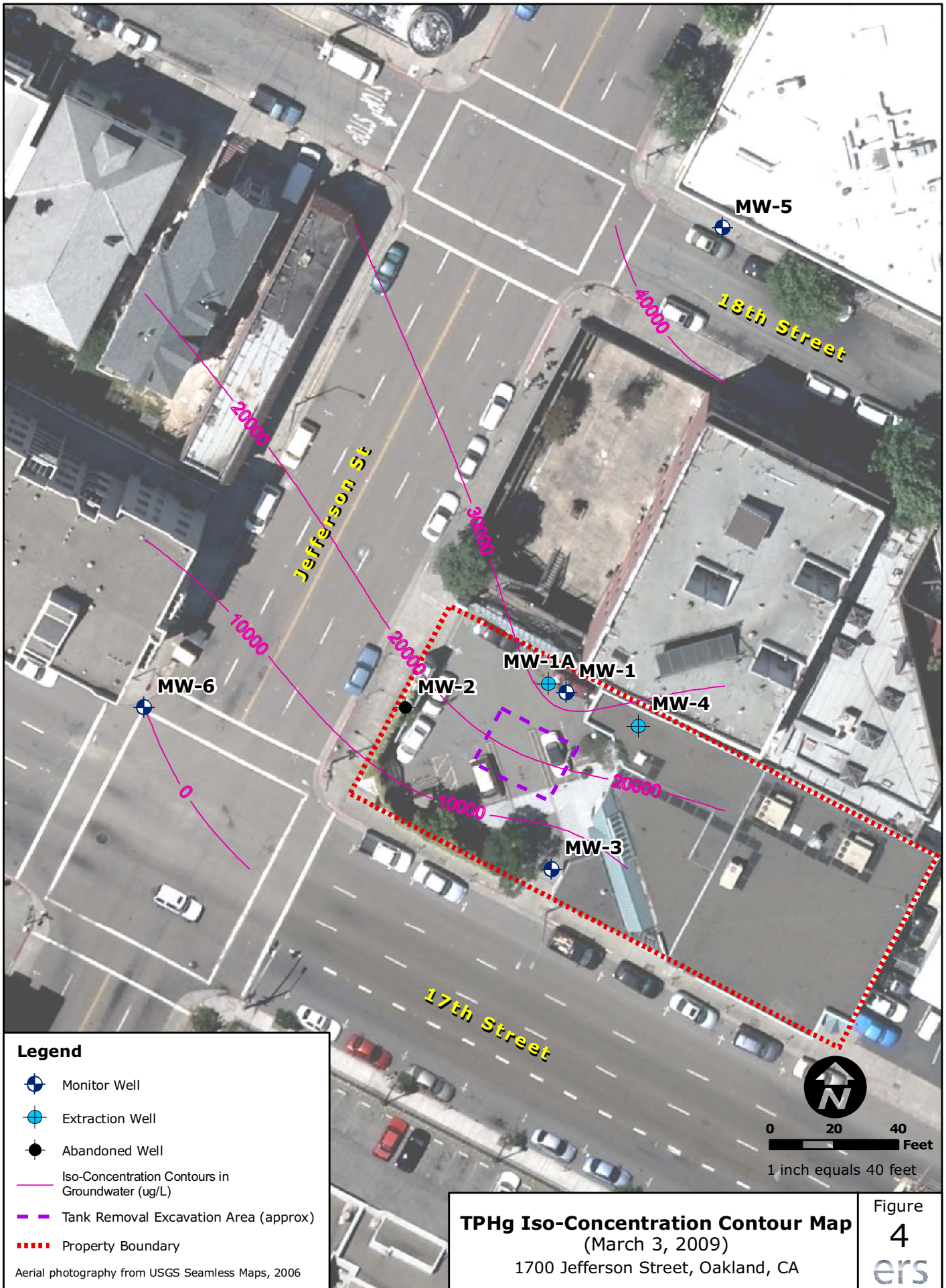
Aerial photography from USGS Seamless Maps, 2006









0 20 40
Feet
1 inch equals 40 feet

Site Plan
1700 Jefferson Street, Oakland, CA





Legend

-  Monitor Well
-  Extraction Well
-  Abandoned Well
-  Iso-Concentration Contours in Groundwater (ug/L)
-  Tank Removal Excavation Area (approx)
-  Property Boundary

Aerial photography from USGS Seamless Maps, 2006



0 20 40 Feet

1 inch equals 40 feet

TPHg Iso-Concentration Contour Map
 (March 3, 2009)
 1700 Jefferson Street, Oakland, CA

Figure
4
 ers



Legend

- Monitor Well
- Extraction Well
- Abandoned Well
- Iso-Concentration Contours in Groundwater (ug/L)
- Tank Removal Excavation Area (approx)
- Property Boundary

Aerial photography from USGS Seamless Maps, 2006



0 20 40 Feet

1 inch equals 40 feet

Benzene Iso-Concentration Contour Map

(March 3, 2009)

1700 Jefferson Street, Oakland, CA

Figure

5

ers

APPENDIX 1

Depth to Water Data Sheet

Site Name: *BPS Reprographics* Date: *3/3/09*
 Location: *1700 Jefferson St, Oakland, CA* Field Tech: *LL/KB*
 Client: *BPS*

Well ID	Well Diameter	Time	DTW	Total Depth	Comments
<i>MW-1</i>	<i>4"</i>	<i>11:23</i>	<i>24.31</i>	<i>31.81</i>	
<i>MW-3</i>	<i>4"</i>	<i>11:25</i>	<i>23.78</i>	<i>31.35</i>	
<i>MW-5</i>	<i>2"</i>	<i>11:31</i>	<i>22.51</i>	<i>33.15</i>	
<i>MW-6</i>	<i>2"</i>	<i>11:27</i>	<i>23.75</i>	<i>32.30</i>	
<i>MW-1A</i>	<i>4"</i>	<i>11:20</i>	<i>22.77</i>	<i>30.60</i>	<i>Extraction Well</i>
<i>MW-4</i>	<i>4"</i>	<i>11:17</i>	<i>24.21</i>	<i>32.42</i>	<i>Extraction Well</i>

Notes: *Rainy day*

Monitor Well Data Sheet

Site Name:	Well/Sample ID: <i>MW-1</i>
Location: <i>1700 Jefferson St, Oakland</i>	Initial Depth to Water (DTW): <i>24.31</i>
Client:	Total Well Depth (TD): <i>31.81</i>
Sampler: <i>Logan Linderman</i>	Well Diameter: <i>4"</i>
Date: <i>3/3/09</i>	1 Casing Volume:
Purge Method: Peristaltic Pump	Purge Rate: <i>0.2 L/min</i>
Sample Method: Low Flow <i>+ add. tubing</i>	Sampling Rate: <i>0.15 L/min</i>
<i>2"</i> well x 1 foot = 0.6 liters	<i>4"</i> well x 1 foot = 2.4L

Time	pH	SC <i>µS</i>	DO	Temp	DTW	Cumulative Volume	ORP	Notes
hh:mm	SU	µmhos/cm	mg/l	C °F	feet	liters	mV	
<i>1153</i>	<i>6.37</i>	<i>1440</i>	<i>1.48</i>	<i>17.4</i>	<i>24.41</i>	<i>1</i>	<i>-71</i>	
<i>1158</i>	<i>6.50</i>	<i>1440</i>	<i>1.17</i>	<i>17.5</i>	<i>24.41</i>	<i>2</i>	<i>-85</i>	
<i>1201</i>	<i>6.52</i>	<i>1440</i>	<i>1.05</i>	<i>17.5</i>	<i>24.41</i>	<i>2.6</i>	<i>-91</i>	
<i>1204</i>	<i>6.54</i>	<i>1440</i>	<i>0.95</i>	<i>17.4</i>	<i>24.41</i>	<i>3.2</i>	<i>-97</i>	
<i>1207</i>	<i>6.56</i>	<i>1440</i>	<i>0.78</i>	<i>17.3</i>	<i>24.41</i>	<i>3.8</i>	<i>-104</i>	
<i>1210</i>	<i>6.58</i>	<i>1440</i>	<i>0.73</i>	<i>17.4</i>	<i>24.41</i>	<i>4.4</i>	<i>-118</i>	
<i>1213</i>	<i>6.59</i>	<i>1440</i>	<i>0.75</i>	<i>17.4</i>	<i>24.41</i>	<i>5</i>	<i>-118</i>	
Did Well Dewater?	<i>No</i>	Start Purge Time:	<i>11:48</i>	DTW prior to sample:	<i>24.41</i>			
Casing volumes Purged:		Stop Purge Time:	<i>12:13</i>	Start Sample Time:	<i>12:15</i>			
Length of Tubing (ft):	<i>~32'</i>	Total Liters Purged:	<i>5</i>	Total Sample Volume:	<i>120 mL</i>			
Well Recharge:	<i>good</i>	Turbidity:	<i>very low</i>	Color:	<i>slight yellow</i>			
Odor:	<i>fuel</i>	Sheen:		Product Thickness (in):	<i>—</i>			

Notes: *Installed 32 feet new tubing*

Monitor Well Data Sheet

Site Name:	Well/Sample ID: <i>MW-3</i>
Location: <i>1700 Jefferson</i>	Initial Depth to Water (DTW): <i>23.78'</i>
Client: <i>BPS</i>	Total Well Depth (TD): <i>31.35'</i>
Sampler: <i>Logan Linderman</i>	Well Diameter: <i>4"</i>
Date: <i>3/3/09</i>	1 Casing Volume:
Purge Method: Peristaltic Pump	Purge Rate: <i>0.2 L/min</i>
Sample Method: Low Flow <i>+ Ded. Tubing</i>	Sampling Rate: <i>0.15 L/min</i>
2" well x 1 foot = 0.6 liters	4" well x 1 foot = 2.4L

Time	pH	SC	DO	Temp	DTW	Cumulative Volume	ORP	Notes
hh:mm	SU	<i>MS</i> µmhos/cm	mg/l	°F	feet	liters	mV	
13:22	6.51	69	4.72	14.5	23.29	1	82	
13:25	5.89	67 70	3.99	14.6	23.40	1.6	112	
13:28	5.52	51	3.44	14.7	23.49	2.2	133	
1331	5.32	46	3.33	14.7	23.55	2.8	149	
1334	5.14	46	3.25	14.8	23.62	3.4	157	
1337	5.00	46	3.18	14.9	23.71	4	163	
1340	4.90	45	3.11	15.0	23.77	4.6	171	
1343	4.86	48	3.05	15.1	23.80	5.2	170	
1346	4.81	48	2.95	15.2	23.84	5.8	176	

Did Well Dewater?	<i>No</i>	Start Purge Time:	<i>13:17</i>	DTW prior to sample:	<i>23.84</i>
Casing volumes Purged:		Stop Purge Time:	<i>1346</i>	Start Sample Time:	<i>1347</i>
Length of Tubing (ft):	<i>~32'</i>	Total Liters Purged:	<i>5.8</i>	Total Sample Volume:	<i>120 ml</i>
Well Recharge:	<i>good</i>	Turbidity:	<i>very low</i>	Color:	<i>clear</i>
Odor:	<i>none</i>	Sheen:	<i>none</i>	Product Thickness (in):	<i>—</i>

Notes: *heavy downpour*
Installed 32 ft. new dedicated tubing

Monitor Well Data Sheet

Site Name:	Well/Sample ID: <i>MW-5</i>
Location: <i>1700 Jefferson St, Oakland</i>	Initial Depth to Water (DTW): <i>22.51'</i>
Client: <i>BPS</i>	Total Well Depth (TD): <i>33.15'</i>
Sampler: <i>Logan Linderman</i>	Well Diameter: <i>2"</i>
Date: <i>3/3/09</i>	1 Casing Volume: <i>0.25 L/min</i>
Purge Method: Peristaltic Pump <i>w/ dedicated tubing</i>	Purge Rate: <i>0.25 L/min</i>
Sample Method: Low Flow	Sampling Rate: <i>0.15 L/min</i>
<i>2" well x 1 foot = 0.6 liters</i>	<i>4" well x 1 foot = 2.4L</i>

Time	pH	SC	DO	Temp	DTW	Cumulative Volume	ORP	Notes
hh:mm	SU	^{<i>45</i>} µmhos/cm	mg/l	°F	feet	liters	mV	
<i>14:34</i>	<i>6.57</i>	<i>1130</i>	<i>1.20</i>	<i>18.8</i>	<i>22.58'</i>	<i>1</i>	<i>-110</i>	
<i>14:37</i>	<i>6.56</i>	<i>1130</i>	<i>0.98</i>	<i>18.8</i>	<i>22.58'</i>	<i>1.75</i>	<i>-112</i>	
<i>14:40</i>	<i>6.57</i>	<i>1130</i>	<i>0.83</i>	<i>18.8</i>	<i>22.58'</i>	<i>2.50</i>	<i>-115</i>	
<i>14:43</i>	<i>6.58</i>	<i>1130</i>	<i>0.80</i>	<i>18.9</i>	<i>22.58'</i>	<i>3.25</i>	<i>-117</i>	
<i>14:46</i>	<i>6.59</i>	<i>1130</i>	<i>0.76</i>	<i>18.9</i>	<i>22.58'</i>	<i>4.00</i>	<i>-120</i>	
<i>14:49</i>	<i>6.59</i>	<i>1130</i>	<i>0.74</i>	<i>18.9</i>	<i>22.58'</i>	<i>4.75</i>	<i>-122</i>	
Did Well Dewater?	<i>No</i>	Start Purge Time:	<i>14:30</i>	DTW prior to sample:	<i>22.58</i>			
Casing volumes Purged:		Stop Purge Time:	<i>14:49</i>	Start Sample Time:	<i>13:52</i>			
Length of Tubing (ft):	<i>~34'</i>	Total Liters Purged:	<i>4.75</i>	Total Sample Volume:	<i>120mL</i>			
Well Recharge:	<i>good</i>	Turbidity:	<i>very low</i>	Color:	<i>clear</i>	<i>Clear</i>		
Odor:	<i>fuel</i> <i>none</i>	Sheen:	<i>none</i>	Product Thickness (in):	<i>_____</i>			

Notes: *Installed 34 feet new tubing*

Monitor Well Data Sheet

Site Name:	Well/Sample ID: <i>MW-6</i>
Location: <i>1700 Jefferson</i>	Initial Depth to Water (DTW): <i>23.75'</i>
Client: <i>BPS</i>	Total Well Depth (TD): <i>32.36'</i>
Sampler: <i>Logan Linderman</i>	Well Diameter: <i>2"</i>
Date: <i>3/3/09</i>	1 Casing Volume:
Purge Method: Peristaltic Pump <i>w/ dedicated tubing</i>	Purge Rate: <i>0.25 L/min</i>
Sample Method: Low Flow	Sampling Rate: <i>0.15 L/min</i>
2" well x 1 foot = 0.6 liters	4" well x 1 foot = 2.4L

Time	pH	SC	DO	Temp	DTW	Cumulative Volume	ORP	Notes
hh:mm	SU	<i>µS</i> µmhos/cm	mg/l	°F	feet	liters	mV	
<i>1407</i>	<i>6.30</i>	<i>1170</i>	<i>1.20</i>	<i>19.7</i>	<i>23.84</i>	<i>1.25</i>	<i>102</i>	
<i>1410</i>	<i>6.39</i>	<i>1190</i>	<i>1.00</i>	<i>19.8</i>	<i>23.84</i>	<i>2</i>	<i>98</i>	
<i>1413</i>	<i>6.44</i>	<i>1190</i>	<i>0.93</i>	<i>19.8</i>	<i>23.84</i>	<i>2.75</i>	<i>100</i>	
<i>1416</i>	<i>6.46</i>	<i>1190</i>	<i>0.93</i>	<i>19.7</i>	<i>23.84</i>	<i>3.5</i>	<i>101</i>	
Did Well Dewater?	<i>No</i>	Start Purge Time:	<i>1402</i>	DTW prior to sample:	<i>23.84</i>			
Casing volumes Purged:		Stop Purge Time:	<i>1416</i>	Start Sample Time:	<i>1418</i>			
Length of Tubing (ft):	<i>~32.5'</i>	Total Liters Purged:	<i>3.5</i>	Total Sample Volume:	<i>120 ml</i>			
Well Recharge:	<i>good</i>	Turbidity:	<i>very low</i>	Color:	<i>clear</i>			
Odor:	<i>none</i>	Sheen:	<i>none</i>	Product Thinkness (in):	<i>—</i>			

Notes: *Installed 32.5' new tubing*

APPENDIX 2



Technical Report for

ERS Corporation

T0600100196-1700 Jefferson, Oakland, CA

Accutest Job Number: C4684

Sampling Date: 03/03/09

Report to:

ERS Corporation
1600 Riviera Ave Suite 310
Walnut Creek, CA 94596
ddement@erscorp.us; kblume@erscorp.us

ATTN: Kenneth Blume

Total number of pages in report: **20**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Laurie Glantz-Murphy
Laboratory Director

Client Service contact: Diane Theesen 408-588-0200

Certifications: CA (08258CA)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.



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Sample Summary

ERS Corporation

Job No: C4684

T0600100196-1700 Jefferson, Oakland, CA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
C4684-1	03/03/09	12:15 KB	03/04/09	AQ	Ground Water	MW-1
C4684-2	03/03/09	13:47 KB	03/04/09	AQ	Ground Water	MW-3
C4684-3	03/03/09	14:52 KB	03/04/09	AQ	Ground Water	MW-5
C4684-4	03/03/09	14:18 KB	03/04/09	AQ	Ground Water	MW-6



Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: MW-1	Date Sampled: 03/03/09
Lab Sample ID: C4684-1	Date Received: 03/04/09
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: T0600100196-1700 Jefferson, Oakland, CA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M4867.D	100	03/05/09	XB	n/a	n/a	VM159
Run #2							

Run #	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	5380	100	30	ug/l	
108-88-3	Toluene	5380	100	50	ug/l	
100-41-4	Ethylbenzene	603	100	30	ug/l	
1330-20-7	Xylene (total)	2800	200	70	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	100	50	ug/l	
	TPH-GRO (C6-C10)	33100	5000	2500	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		60-130%
2037-26-5	Toluene-D8	104%		60-130%
460-00-4	4-Bromofluorobenzene	96%		60-130%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-3	Date Sampled: 03/03/09
Lab Sample ID: C4684-2	Date Received: 03/04/09
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: T0600100196-1700 Jefferson, Oakland, CA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M4865.D	10	03/05/09	XB	n/a	n/a	VM159
Run #2							

Run #	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	37.1	10	3.0	ug/l	
108-88-3	Toluene	10	10	5.0	ug/l	
100-41-4	Ethylbenzene	3.8	10	3.0	ug/l	J
1330-20-7	Xylene (total)	12.3	20	7.0	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	ND	10	5.0	ug/l	
	TPH-GRO (C6-C10)	3020	500	250	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		60-130%
2037-26-5	Toluene-D8	103%		60-130%
460-00-4	4-Bromofluorobenzene	93%		60-130%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-5		
Lab Sample ID: C4684-3		Date Sampled: 03/03/09
Matrix: AQ - Ground Water		Date Received: 03/04/09
Method: SW846 8260B		Percent Solids: n/a
Project: T0600100196-1700 Jefferson, Oakland, CA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M4868.D	250	03/05/09	XB	n/a	n/a	VM159
Run #2							

Run #	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	11700	250	75	ug/l	
108-88-3	Toluene	3560	250	130	ug/l	
100-41-4	Ethylbenzene	1290	250	75	ug/l	
1330-20-7	Xylene (total)	2200	500	180	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	250	130	ug/l	
	TPH-GRO (C6-C10)	43400	13000	6300	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		60-130%
2037-26-5	Toluene-D8	104%		60-130%
460-00-4	4-Bromofluorobenzene	93%		60-130%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-6	Date Sampled: 03/03/09
Lab Sample ID: C4684-4	Date Received: 03/04/09
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: T0600100196-1700 Jefferson, Oakland, CA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M4890.D	1	03/06/09	XB	n/a	n/a	VM160
Run #2							

Run #	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
108-88-3	Toluene	0.53	1.0	0.50	ug/l	J
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.70	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
	TPH-GRO (C6-C10)	ND	50	25	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		60-130%
2037-26-5	Toluene-D8	104%		60-130%
460-00-4	4-Bromofluorobenzene	94%		60-130%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Northern California
STANDARD OPERATING PROCEDURE

Sample Receiving Checklist

Job # C4684
Sample Control Initial JM

Review Chain of Custody The Chain of Custody is to be completely and legibly filled out by Client.

- Are these regulatory (NPDES) samples? Yes / No circle one
- Is pH requested? Yes / No circle one Was Client informed that hold time is 15 min? Yes / No circle one
If yes, did Client consent to continue? _____
- Are sample within hold time? Yes / No circle one Are sample in danger of exceeding its hold-time within 6-48 hours?
- Report to info is complete and legible, including;
 - Type of deliverable needed Name Address phone e-mail
- Bill to info is complete and legible, including; PO# Credit card Contact address phone e-mail
- Contact and/or Project Manager identified, including; phone e-mail
- Project name / number Special requirements? Yes / No circle one
- Sample IDs / date & time of collection provided? Yes / No circle one
- Is Matrix listed and correct? Yes / No circle one
- Analyses listed are those we do or client has authorized a subcontract? Yes / No circle one
- Chain is signed and dated by both client and sample custodian? Yes / No circle one
- TAT requested available? Approved by _____

Review Coolers:

- Were Coolers temperatures measured at $\leq 6^{\circ}\text{C}$? Cooler # _____ Temp 11.9 $^{\circ}\text{C}$
 - If cooler is outside the $\leq 6^{\circ}\text{C}$; note down below the affected bottles in that cooler
 - Note that ANC does NOT accept evidentiary samples. (We do not lock refrigerators)
- Shipment Method Accutest Courier
- Custody Seals: Present : Yes / No circle one Unbroken: Yes / No circle one

Review of Sample Bottles: if you answer no, explain below

- Sample ID / bottle number / Date / Time of bottle labels match the COC? Yes / No circle one
- Sample bottle intact? Yes / No circle one
- Is there enough samples for requested analyses? If so, were samples placed in proper containers? Yes / No circle one
- Proper Preservatives? Check pH on preserved samples except 1664, 625, 8270 and VOAs and list below
- Are VOAs received without headspace? Size of bubble (not greater than 6mm in diameter) Yes / No circle one
List sample ID and affected container

Lab #	Client Sample ID	pH Check	Other Comments/Issues

Non-Compliance issues and discrepancies on the COC are forwarded to Project Management

\\Anc-srv-file1\Entech-Data\Laboratory\Sample_Control\Form_Sample Receipt Checklist_Rev0.doc



GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C4684
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM159-MB	M4853.D	1	03/05/09	XB	n/a	n/a	VM159

The QC reported here applies to the following samples:

Method: SW846 8260B

C4684-1, C4684-2, C4684-3

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.70	ug/l	
	TPH-GRO (C6-C10)	ND	50	25	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	103% 60-130%
2037-26-5	Toluene-D8	103% 60-130%
460-00-4	4-Bromofluorobenzene	93% 60-130%

Method Blank Summary

Job Number: C4684
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM160-MB	M4882.D	1	03/06/09	XB	n/a	n/a	VM160

The QC reported here applies to the following samples:

Method: SW846 8260B

C4684-4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.70	ug/l	
	TPH-GRO (C6-C10)	ND	50	25	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	105% 60-130%
2037-26-5	Toluene-D8	102% 60-130%
460-00-4	4-Bromofluorobenzene	91% 60-130%

Blank Spike Summary

Job Number: C4684
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM159-BS	M4849.D	1	03/05/09	XB	n/a	n/a	VM159

The QC reported here applies to the following samples:

Method: SW846 8260B

C4684-1, C4684-2, C4684-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	20.3	102	60-130
100-41-4	Ethylbenzene	20	20.2	101	60-130
1634-04-4	Methyl Tert Butyl Ether	20	20.8	104	60-130
108-88-3	Toluene	20	18.5	93	60-130
1330-20-7	Xylene (total)	60	61.0	102	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	105%	60-130%
2037-26-5	Toluene-D8	96%	60-130%
460-00-4	4-Bromofluorobenzene	96%	60-130%

4.2
4

Blank Spike Summary

Job Number: C4684
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM159-BS	M4852.D	1	03/05/09	XB	n/a	n/a	VM159

The QC reported here applies to the following samples:

Method: SW846 8260B

C4684-1, C4684-2, C4684-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
	TPH-GRO (C6-C10)	125	126	101	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	60-130%
2037-26-5	Toluene-D8	102%	60-130%
460-00-4	4-Bromofluorobenzene	95%	60-130%

4.2
4

Blank Spike Summary

Job Number: C4684
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM160-BS	M4878.D	1	03/06/09	XB	n/a	n/a	VM160

The QC reported here applies to the following samples:

Method: SW846 8260B

C4684-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	19.7	99	60-130
100-41-4	Ethylbenzene	20	20.0	100	60-130
1634-04-4	Methyl Tert Butyl Ether	20	20.6	103	60-130
108-88-3	Toluene	20	18.5	93	60-130
1330-20-7	Xylene (total)	60	60.6	101	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	60-130%
2037-26-5	Toluene-D8	99%	60-130%
460-00-4	4-Bromofluorobenzene	99%	60-130%

4.2
4

Blank Spike Summary

Job Number: C4684
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM160-BS	M4881.D	1	03/06/09	XB	n/a	n/a	VM160

The QC reported here applies to the following samples:

Method: SW846 8260B

C4684-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
	TPH-GRO (C6-C10)	125	123	98	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	105%	60-130%
2037-26-5	Toluene-D8	104%	60-130%
460-00-4	4-Bromofluorobenzene	96%	60-130%

4.2
4

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C4684
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C4667-4MS	M4869.D	1	03/05/09	XB	n/a	n/a	VM159
C4667-4MSD	M4870.D	1	03/05/09	XB	n/a	n/a	VM159
C4667-4 ^a	M4860.D	1	03/05/09	XB	n/a	n/a	VM159

The QC reported here applies to the following samples:

Method: SW846 8260B

C4684-1, C4684-2, C4684-3

CAS No.	Compound	C4667-4 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	20	21.0	105	20.0	100	5	60-130/25
100-41-4	Ethylbenzene	ND	20	19.3	97	19.8	99	3	60-130/25
1634-04-4	Methyl Tert Butyl Ether	ND	20	18.9	95	17.4	87	8	60-130/25
108-88-3	Toluene	ND	20	18.7	94	18.7	94	0	60-130/25
1330-20-7	Xylene (total)	ND	60	57.9	97	58.1	97	0	60-130/25

CAS No.	Surrogate Recoveries	MS	MSD	C4667-4	Limits
1868-53-7	Dibromofluoromethane	104%	100%	104%	60-130%
2037-26-5	Toluene-D8	98%	100%	103%	60-130%
460-00-4	4-Bromofluorobenzene	96%	96%	89%	60-130%

(a) Sample was not preserved to a pH < 2.

4.3
4

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C4684
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C4706-1MS	M4898.D	1	03/06/09	XB	n/a	n/a	VM160
C4706-1MSD	M4899.D	1	03/06/09	XB	n/a	n/a	VM160
C4706-1	M4883.D	1	03/06/09	XB	n/a	n/a	VM160

The QC reported here applies to the following samples:

Method: SW846 8260B

C4684-4

CAS No.	Compound	C4706-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	20	20.8	104	19.8	99	5	60-130/25
100-41-4	Ethylbenzene	ND	20	20.3	102	20.0	100	1	60-130/25
1634-04-4	Methyl Tert Butyl Ether	ND	20	18.2	91	18.1	91	1	60-130/25
108-88-3	Toluene	ND	20	19.1	96	18.6	93	3	60-130/25
1330-20-7	Xylene (total)	ND	60	60.6	101	59.3	99	2	60-130/25

CAS No.	Surrogate Recoveries	MS	MSD	C4706-1	Limits
1868-53-7	Dibromofluoromethane	103%	99%	106%	60-130%
2037-26-5	Toluene-D8	98%	99%	105%	60-130%
460-00-4	4-Bromofluorobenzene	98%	95%	93%	60-130%

4.3
4