ENVIRONMENTAL RISK SPECIALTIES CORPORATION

October 20, 2009

Mr. George Lockwood
State Water Resources Control Board
Division of Water Quality
P.O. Box 2231
Sacramento, California 95812

Re: Request for Review
1700 Jefferson Street, Oakland, California
ACEH Case RO# 151, RWQCB Case 01-0210

Dear Mr. Lockwood:

At the request of Mr. David Blain and BPS Reprographic Services, responsible party for the Underground Storage Tank (UST) Case at 1700 Jefferson Street, Oakland, California (Site), Environmental Risk Specialties Corporation (ERS) has prepared this petition requesting that the State Water Resources Control Board (SWRCB) review this case and facilitate evaluating the case for regulatory closure.

Petitioner

BPS Reprographic Services
c/o Mr. David Blain
945 Bryant Street 94103
(415) 495-8700
david.blain@bps.com

Site

1700 Jefferson Street, Oakland, California, ACEH RO# 151, RWQCB Case 01-0210.

Site Owner

BPS Reprographic Services
945 Bryant Street 94103

Responsible Party

BPS Reprographic Services (Property Owner and RP in the UST Cleanup Fund)

Reasons for Request for Closure

The Site is located on the northeast corner of the intersection of Jefferson Street and 17th Street in Oakland, California (Figure 2). On June 16, 1987, three gasoline underground storage tanks (USTs) were removed from the Site. Three groundwater monitoring wells (MW-1 through MW-3) 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, groundwater extraction 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. 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 from January 1994 to June 2008. At the request of ERS, semi-annual groundwater monitoring was conducted in 2009.

Following the March 2009 groundwater sampling event, ERS requested regulatory closure as a "low risk groundwater case" case based on criteria in the SWRCB January 5, 1996 Memorandum in its June 3, 2009 Request for Regulatory Closure (attached). In its September 10, 2009 Comment Letter, Alameda County Environmental Health (ACEH) denied closure stating that data gaps exist and requested additional soil and groundwater investigation, plume definition, sample analyses, risk assessment, a well survey, and other miscellaneous data.

The *September 2009 Groundwater Monitoring Report*, *Request for Regulatory Closure, and ERS's October 20, 2009 Response to Comments* are attached for additional background.

Petition

ERS believes that criteria for evaluating a site for regulatory closure, as summarized in the SWRCB January 5, 1996 Memorandum, have been satisfied sufficiently with confidence. While relatively minor data gaps are present, sufficient data and lines of evidence exist to assess or infer that potential human health risk and risk to the environment are acceptable and residual petroleum hydrocarbon concentrations in soil and groundwater will continue to naturally attenuate in a reasonable timeframe. In addition, one of the primary issues driving ongoing investigation and oversight is the ongoing regulatory belief that petroleum hydrocarbon impacts reported in offsite

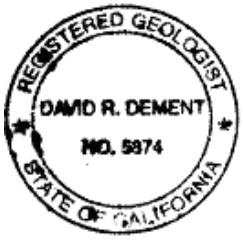
well MW-5 originated from the Site. ERS believes this is not the case, and that an unknown offsite source is present in the vicinity of offsite well MW-5.
ERS believes most of the technical comments and direction requested in the latest comment letter will do little to significantly improve our understanding of site conditions and evaluating the site for regulatory closure, and are not consistent with the SWRCB's Resolution 2009-042. In fact, ACEH's cursory rejection of ERS's contention that offsite well MW-5 is being impacted by an offsite source as a mere "hypothesis", and their dismissal of legitimate supporting data without any discussion whatsoever demonstrates their bias and lack of objectivity. ACEH states in paragraph two of their September 10, 2009 comment letter that "the hypothesis is not substantiated" yet did not address any of the questions ERS posed in Section 6.0 of its June 3, 2009 *Request for Regulatory Closure* or offer any alternative explanation. ERS welcomes further evaluation of our so-called "hypothesis" and are open to other opinions to help explain reported petroleum hydrocarbon impacts in offsite well MW-5.

A copy of ACEH's September 10, 2009 denial letter, ERS's June 3, 2009 *Request for Regulatory Closure*, ERS's September 17, 2009 *Groundwater Monitoring Report*, and ERS's October 20, 2009 *Response to Comments* are attached for background. Some reports are currently on the Geotracker database; however, the majority of the other investigation and groundwater monitoring reports are located on ACEH's FTP database at:
http://ehgis.acgov.org/dehpublic/dehpublic.jsp.

We respectfully request that the case be reviewed and considered for a commercial regulatory closure in regards to the former USTs. We understand that Site use for the foreseeable future will be commercial and BPS has no plans to market the property. In the event further work is necessary to fully justify a finding of No Further Action, we request that the case be transferred to the RWQCB for any further oversight.

If you have any questions, please contact me at (925) 938-1600 extension 109 or via email at ddement@erscorp.us.

Sincerely,



David DeMent, PG
Senior Geologist

Attachments

cc: Mr. David Blain, BPS Reprographics Services
Ms. Barbara Jakub, ACEH

June 3, 2009

Ms. Barbara Jakub
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Oakland, CA 94502-6577

RE: Request for Regulatory Closure
1700 Jefferson Street, Oakland, California
ACHCSA Case RO# 000151, RWQCB Case 01-0210

Dear Ms. Jakub:

On behalf of BPS Document Solutions (BPS), Environmental Risk Services Corporation has prepared this Request for Regulatory Closure Report for the Site located at 1700 Jefferson Street, Oakland, California. This Report has been prepared at the request of BPS to support a finding of no further action by your agency and regulatory closure concurrence by the San Francisco Regional Water Quality Control Board. ERS will upload this Request for Regulatory Closure to the State Water Resources Control Board's GeoTracker database.

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

Sincerely,

David DeMent, PG
Senior Geologist

cc: Mr. David Blain, BPS Document Solutions

Enclosure

REQUEST FOR REGULATORY CLOSURE

REPORT

1700 Jefferson Street
Oakland, California

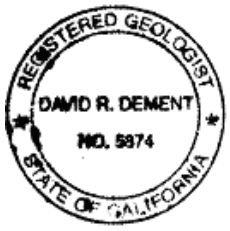
Prepared for:
Ms. Barbara Jakub
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Prepared by:
Environmental Risk Specialties Corporation
Walnut Creek, California

June 3, 2009

Reviewed By: _____

David DeMent, PG
Senior Geologist



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INTRODUCTION

This Request for Regulatory Closure Summary has been prepared by Environmental Risk Specialties Corporation (ERS) on behalf of BPS Document Solutions (BPS), and summarizes site investigation, groundwater monitoring, and remediation activities performed to date at the former City Blue Print Facility located at 1700 Jefferson Street, Oakland, California (Site). This Summary has been prepared for review by the Alameda County Health Care Services Agency (ACHCSA) and the San Francisco Regional Water Quality Control Board (RWQCB). The goal of this Summary is to support a finding of no further action and obtain full commercial site closure in regards to the former underground storage tanks (USTs).

1.0 BACKGROUND

The Site is located on the northeast corner of the intersection of Jefferson Street and 17th Street in Oakland, California. The 165 feet by 65 feet Site is bordered by Jefferson Street to the northeast, buildings to the northeast and southeast, and 17th Street to the south (Figure 2).

1.1 UST Removal

On June 16, 1987, three gasoline underground storage tanks (USTs) were removed from the Site and a suspect unauthorized release was confirmed. Two USTs had a capacity of 1,000 gallons and one UST held 550 gallons of gasoline. Soil was reportedly excavated to 9 feet bgs, aerated onsite to "acceptable" levels, and used as fill material to backfill and compact the former excavation. The former USTs were located in the center of the Site approximately 25 feet from Jefferson Street and this area is currently vehicle parking. The timeframe the former service station operated in unknown, but Blue Print Services, now known as BPS, purchased the property in 1986 and used the USTs for less than one year.

1.2 Subsurface Investigation and Well Installation

Groundwater monitoring wells MW-1 through MW-3 were installed in June 1987 and well MW-1 initially contained 30 inches of free-phase floating product (free product). Soil borings 4 and 5 were advanced along the northeast sidewall of the excavation. Boring 4 reported TPH at 1,700 to 2,100 mg/kg from 20 to 25 feet bgs, and boring 5 reported 900 to 3,300 mg/kg TPH from 20 to 25 feet bgs. In November 1987, well MW-2 was 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. Offsite monitoring well MW-6 was installed in April 1996.

In February 1998, Harding Lawson Associates (HLA) advanced five Cone Penetrometer Test (CPT) borings in locations south and north of the Site, and primarily north of well MW-5. Grab groundwater samples obtained in the borings reported varying concentrations of TPHg ranging from non-detect (less than 50 µg/l) to 200 µg/l in CPT-2 (located approximately 75 feet southeast of well MW-3). CPT-3 and CPT-4, located 140 to 180 feet north of well MW-5, reported 180 and 50 µg/l, respectively.

1.3 Groundwater Monitoring

Groundwater monitoring wells MW-1 or 1A, MW-3, MW-4, and MW-5 have been sampled 12 times between August 1991 and March 1996 and wells MW-1, MW-3, MW-5, and MW-6 have been sampled 51 times between March 1996 and March 2009. The water elevation measurements were recorded to the nearest 0.01-foot with respect to mean sea level. Historical low and high groundwater elevation depths are summarized in Table 1.

TABLE 1 – HISTORICAL GROUNDWATER ELEVATIONS

Well Number	Date Measured	Well Elevation (feet above MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-1	06/29/06	32.36	22.56	High 9.80
	09/26/97		26.80	Low 5.56
MW-3	06/23/05	31.77	22.40	High 9.37
	12/28/04		28.71	Low 3.06
MW-5	06/29/06	30.56	20.78	High 9.78
	09/19/96		24.48	Low 6.08
MW-6	06/29/06	31.26	21.85	High 9.41
	12/23/96		25.88	Low 5.38

Notes: All measurements are in feet

1.3.1 Groundwater Gradient

Historical calculated groundwater gradients and flow directions are summarized in Table 2. Groundwater gradients and flow directions prior to June 1996 are suspect due to the presence of free product, area dewatering, and/or onsite groundwater extraction.

Calculated groundwater flow directions and gradients were checked for accuracy and several incorrect values were noted. Corrected flow direction and gradients are summarized in Table 2 and have been bolded.

TABLE 2 - GROUNDWATER GRADIENT AND FLOW DIRECTION

Date Monitored	Reported Gradient	Reported Direction	Revised Gradient	Revised Direction
06/11/96	0.003	SW	0.003	SW
12/23/96			0.002	S
06/04/97	0.009	NW	**<0.001**	**N-NE**
03/31/98	0.002	W	0.002	W
06/18/98			<0.001	W-NW
08/28/98	0.007	E	0.007	E
12/02/98	0.006	NW	0.006	NW
03/10/99	0.011	NW	0.011	NW
09/29/99	0.004	NW	0.004	NW
02/11/00	0.001	NW	**0.004**	W-NW
05/30/00	0.003	W	0.004	W
11/16/00	0.044	W	**0.005**	W-NW
04/02/01	0.001	SW	**0.010**	W-SW
06/28/01	0.005	SW	0.005	W-SW
08/30/01	0.004	SW	0.004	W-NW
04/23/02	0.006	W-SW	0.006	SW
06/14/02	0.004	W- SW	0.005	**W- NW**
08/20/02	0.005	W- SW	0.005	**W- NW**
12/27/02	0.005	W- SW	0.005	**W- NW**
04/01/03	0.007	W- SW	**0.001**	**W- NW**
07/01/03	0.006	W-NW	0.004	W-NW
09/24/03	0.005	W-NW	0.005	W-NW
12/29/03	0.003	W-NW	0.005	W-NW
05/18/04	0.006	W	0.004	W
06/30/04	0.002	N	0.002	N-NE
09/23/04	0.005	W	0.005	W
12/28/04	0.045[1]	SE[1]	**0.004**	**NW**
03/16/05	0.010	SW	**0.005**	SW
06/23/05	0.005	W	0.004	W
09/09/05	0.005	W	0.004	W-NW
12/02/05	0.006	NW	0.005	W-NW
03/24/06	0.006	NW	0.005	W-SW
09/13/06	0.005	W-NW	0.005	W-NW
12/13/07	0.004	W-NW	0.005	W-NW
03/26/08	0.004	W	0.005	W

Date Monitored	Reported Gradient	Reported Direction	Revised Gradient	Revised Direction
06/02/08	0.004	W	0.005	W
03/03/09	0.004	W	0.004	W

Notes: [1] MACTEC reported an error in groundwater measurement
Bolded values represent a corrected value that varies from previously reported values

1.3.2 Groundwater Monitoring Analytical Results

Historical free product thickness and well sample 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							10
	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	

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)
	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	
MW-1	02/11/00	19,000	4,100	4,800	530	2,800	6.6	
(cont)	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	
	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	

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)
	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							
MW-3	08/01/91	74,000	1,600	4,600	670	4,300		4
(cont)	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		
	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	

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)
	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	
MW-3	12/27/02	4,000	110	280	57	260	19	
(cont)	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	
	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

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)
	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		
MW-5	03/06/96	51,000	15,000	2,800	2,000	2,400		
(cont)	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	
	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	

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)
	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	
MW-5	09/09/05	46,000	10,000	2,700	1,100	2,100	<1,200	
(cont)	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	
	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	

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)	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	<0.05	<0.5	<0.5	<2.5	
	04/01/03	<50	<0.5	<0.05	<0.5	<0.5	<2.5	
	07/01/03	<50	<0.5	<0.05	<0.5	<2.5	<2.5	
	09/25/03	<50	<0.5	<0.05	<0.5	<2.5	<2.5	
	12/29/03	<50	<0.5	<0.05	<0.5	<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	
	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

1.4 Active/Passive Remediation

After free product was initially reported in well MW-1, HLA instituted a bailing program in this well on an approximate daily basis. Between September 1987 and March 1991, BPS or HLA personnel removed an estimated 2,300 gallons of free product from well MW-1 and/or MW-1A.

HLA constructed a groundwater extraction and treatment system and began operation in June 1992. HLA reported that between June 1992 and July 1999, the system extracted approximately 1,384,490 gallons of water and successfully removed an additional 867 gallons of free product. In April 1998, HLA had free product samples analyzed and determined that free product was comprised of leaded gasoline. Measurable free product has not been observed in any monitoring or extraction 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.

1.5 Subsurface Conditions

Soil boring logs from monitoring wells MW-1 through MW-3, and exploratory soil boring logs from borings 1, 3, 4, and 5, show relatively consistent subsurface conditions across the Site. From the surface to approximately 17 to 20 feet bgs, soils are predominantly a medium dense to dense silty sand (SM) to clayey sand (SC) with fluctuating amounts of silt/clay fines. From 17 to 20 feet bgs to 31 to 33 feet bgs, soils are predominantly moist to saturated, fine to very fine-grained sand (SP). The SP sand, interpreted as the first-encountered water-bearing zone, is underlain by a stiff to very stiff silty clay (CH).

Groundwater was generally encountered during drilling between 25.0 and 27.0 feet bgs and appears to be relatively unconfined.

2.0 LOCAL AND REGIONAL HYDROGEOLOGY

The Site is located in an urban, downtown commercial district. The subject property is approximately 32 feet above sea level and the surrounding area gently slopes towards the north and northwest. San Francisco Bay is approximately 2.6 miles west-northwest of the Site, Oakland's Inner Harbor is approximately 4,950 feet southwest, and Lake Merritt is approximately 2,900 feet east.

The predominant groundwater flow direction since 1998 is to the west to west-northwest at a consistent average gradient of 0.005. Based on this groundwater flow direction, wells MW-3 and MW-5 are cross gradient of the former USTs and well MW-6 is downgradient.

A geologic cross-section prepared by MACTEC in 2003 indicates that migration potential is limited in the vertical direction due to a silty clay (CL/ML) aquitard at least 10 feet thick underlying the silty sand (SM/SP) water bearing zone.

3.0 SENSITIVE RECEPTOR SURVEY

A sensitive receptor survey or well survey has not been completed for the Site. The Site is located in a commercial district and there are no apparent sensitive receptors within 300 feet.

4.0 REMEDIATION EFFECTIVENESS

UST and product line removal and overexcavation activities performed in June 1987 removed the original source of petroleum hydrocarbon impact in the subsurface. Free product bailing conducted from September 1987 to March 1991 removed an estimated 2,300 gallons of free product. Following free product bailing, a groundwater extraction system operated between June 1992 and July 1999, and removed an estimated additional 867 gallons of free and dissolved product.

Based on the findings of periodic groundwater monitoring, dissolved concentrations of TPHg, BTEX, and MTBE continue to be reported in groundwater in wells MW-1 and MW-3 located adjacent to the former UST excavation. The trends in groundwater analytical results suggest that TPH impacts are primarily the result of continued leaching from impacted soil that exists from approximately 15 to 25 feet bgs in the immediate vicinity of the former USTs, as reported in soil samples collected in soil borings 4 and 5, and well MW-1 below 20 feet bgs.

Groundwater monitoring has been performed since June 1987 and quarterly groundwater monitoring has been conducted since January 1994. Analytical results demonstrate that natural attenuation is occurring at the Site, but there are ongoing sources of impact to groundwater near the former UST excavation in wells MW-1 and MW-3. TPHg, BTEX, and MTBE have been essentially non-detect in well MW-6, located approximately 100 feet west in the confirmed downgradient direction from the former USTs (source area).

Based on the general lack of reportable petroleum hydrocarbons in well MW-6, significant sources of impact to groundwater have been removed and wells MW-1 and MW-3 appear to be located within a relatively localized plume of impacted groundwater surrounding the original source area. Several lines of evidence indicate that well MW-5 is impacted by an unknown offsite source, and this well does not characterize groundwater impacted by the former onsite USTs.

5.0 CONCLUSIONS

Based on reported field observations, analytical results of soil and groundwater samples collected during UST removal activities and well installation, and groundwater monitoring well sampling results summarized in this Report, ERS concludes that:

- Groundwater flow direction beneath the Site is to the west-northwest at gradients ranging from 0.001 to 0.006 (from 2001 to 2009), and monitoring well MW-6 is correctly located to characterize groundwater in the confirmed downgradient direction from the former USTs;

- TPHg and BTEX trend comparisons indicate that natural attenuation is occurring in all four monitoring wells, decreasing concentration trends have been specifically noted in wells MW-1 and MW-3 following the completion of onsite remedial activities, and concentrations of TPHg and BTEX in offsite well MW-5 have been consistently higher than concentrations in onsite well MW-1 over time;

- Petroleum hydrocarbon impacts in groundwater reported in well MW-5 are due to an unknown offsite source, and are not due to migration from the onsite USTs;

- Source removal activities have successfully removed the sources of petroleum hydrocarbon impact in soil and groundwater adjacent to the former USTs, and remaining impacts to groundwater appear to be due to residual impacts identified in soil from 15 to 25 feet bgs;

- The general lack of petroleum hydrocarbon impacts in groundwater in well MW-6 indicate that offsite migration is minimal and natural attenuation processes active at the Site appear to limit potential petroleum hydrocarbon migration in groundwater;

- Focused soil gas sampling for risk assessment purposes would very likely indicate that residual petroleum hydrocarbon concentrations in subsurface soil and groundwater do

not represent an unacceptable human health risk using commercial criteria, and should be performed to support obtaining a commercial site closure;

- 60+ periodic groundwater monitoring events demonstrate that residual petroleum hydrocarbon impacts in groundwater continue to decline with time and active remediation and continued groundwater monitoring is not warranted; and

- The Site should be approved for commercial regulatory closure.

6.0 REQUEST FOR REGULATORY CLOSURE

On behalf of BPS, ERS requests that the Site be evaluated for commercial site closure in regards to the former USTs, and consistent with SWRCB Resolution 2009-0042. The six criteria for case closure as presented by the RWQCB in its January 5, 1996 Memorandum to local oversight agencies have been satisfied with an adequate degree of confidence and the Site appears to qualify as a "low risk groundwater case." Potential sources of impact to groundwater as free product were removed during reported remedial efforts and ongoing impacts to groundwater likely occur due to residual petroleum hydrocarbons leaching from soil between 15 and 25 feet bgs.

#1 - The source has been removed.

The three USTs and associated piping were removed in 1987 and an unknown quantity of petroleum hydrocarbons was removed when soil adjacent to the former USTs was excavated and aerated. Free product bailing reportedly removed approximately 867 gallons (5,200 pounds) and groundwater extraction removed an additional 300 to 400 pounds of dissolved phase petroleum hydrocarbons, for a total of 5,500 to 5,600 pounds of hydrocarbons.

Groundwater monitoring conducted at the Site demonstrates that natural attenuation is occurring and no significant offsite migration is occurring.

#2 - The site has been adequately characterized.

ERS believes that the Site has been adequately characterized with confidence to evaluate the migration potential and concentration of residual petroleum hydrocarbons in subsurface soil and groundwater. Soil samples collected in soil borings advanced on the Site following UST removal in 1987 reported that TPHg/BTEX impacts exist at depth between 15 to 25 feet bgs. In well MW-1, 4,500 mg/kg TPHg was reported at 24 feet bgs,

in soil boring 4, TPHg was reported at 2,100 mg/kg at 20 feet bgs and 1,700 mg/kg at 25 feet bgs, and in soil boring 5, TPHg was reported at 900 mg/kg at 20 feet bgs and 3,300 mg/kg at 25 feet bgs. Since these TPH concentrations are 22 years old, degradation and attenuation has occurred, but TPH leaching from soil continues to impact groundwater.

Petroleum hydrocarbon concentrations in soil gas have not been evaluated using currently accepted soil gas sampling protocols. However, based on the depth of known residual petroleum hydrocarbons and limited permeability in shallow soils from the surface to 15 feet bgs, TPH impacts in soil gas are estimated to be low to non-detect.

#3 - The dissolved hydrocarbon plume is not migrating.

Based on a west to west-northwest groundwater flow direction from May 1998 to March 2009, and essentially non-detect water sample analytical results in groundwater monitoring well MW-6, the dissolved hydrocarbon plume is apparently contained onsite. Water sample analytical results in groundwater monitoring well MW-3, located within the apparent plume of impacted groundwater, has demonstrated downward trends in the concentration of TPHg and BTEX and indicates that natural attenuation is occurring. Residual sources of petroleum hydrocarbon impact to groundwater in the vicinity of well MW-1 are also decreasing, but at a slower rate. Generally, the plume appears to be stable and confined to the northwest corner of the Site.

ERS believes that issues related to well MW-5 have been erroneously reported for many years. Following the installation of wells MW-1 through MW-3, groundwater flow direction was initially calculated to the north-northeast. At this time, well MW-1 reportedly contained 30 inches of free product and the calculated groundwater elevation was a corrected value. The initial gradient was 0.011, which is abnormally steep, but this was not known at the time. Regional topography contours suggest groundwater flow direction should be north to west and a topographic high exists south of the Site. Groundwater flow direction and gradient should have been confirmed, but free product removal efforts in well MW-1 and subsequent groundwater extraction, likely made this difficult. No information was reviewed to confirm the groundwater flow direction from approximately July 1987 to June 1996. Site plans prepared during this timeframe simply depicted an "Approximate groundwater flow direction" arrow to the north-northeast, and figures were repeatedly prepared at an incorrect scale that implied well MW-5 was considerably closer to the Site.

As summarized in Table 2, groundwater flow direction and gradient from June 1996 to December 1998 varied most likely due to relatively shallow gradients and operation of

groundwater extraction equipment at the Site. During this timeframe, groundwater flow direction was calculated to the north-northeast one out of seven events, and at a gradient approximating 0.001. Once the groundwater extraction system started "winding down", the calculated groundwater flow direction was consistently west to west-northwest. From December 1998 to March 2009, the calculated groundwater flow direction was west or west-northwest 21 out of 31 sampling events, and northwest to southwest 30 out of 31 events.

Data documenting a north to north-northeast groundwater flow direction is scarce and the little data that exists is suspect. About this time, both Consultant and Regulator alike appeared to assume that the groundwater flow direction was northerly, and well MW-5 was located downgradient of the former USTs. This general belief permeated ACHCSA comment letters as late as February 13, 2004, despite a reported southwest to northwest groundwater flow direction during the previous 16 sampling events. To be fair, HLA helped perpetuate this assumption with incorrectly scaled maps depicting MW-5 significantly closer to the former USTs than the actual distance of approximately 160 feet, not drawing attention to the westerly flow direction, and not raising the question that petroleum hydrocarbons reported in well MW-5 may have originated from another unknown source. However, questions exist based on reported groundwater monitoring data that cannot be answered under the assumption that impacts reported in well MW-5 originated from the Site.

1. Why have BTEX concentrations remained almost unchanged, or decreased very little, over the last 16 years in well MW-5 while BTEX concentrations have decreased significantly in wells MW-1 and MW-3 during this timeframe?

2. Why are BTEX concentrations reported in well MW-5 (located approximately 160 feet north) higher than corresponding BTEX concentrations in well MW-1 (located adjacent to the former USTs) if the former USTs are the source?

3. Why were BTEX concentrations so low in grab groundwater samples collected north of well MW-5 (CPT-3 through CPT-6) if the petroleum hydrocarbons reported in well MW-5 supposedly originate from the Site? How could petroleum hydrocarbons migrate 160 feet then apparently "stop"? How could free product migrate 160 feet north and then apparently stop?

4. Why are TPHg and BTEX almost non-detect in well MW-6 located only 70 to 75 feet west of the former USTs, and located directly downgradient of the former USTs during 10 of the last 14 sampling events?

5. Regardless of the groundwater flow direction, how can any significant petroleum hydrocarbon migration occur in groundwater when the gradient approximates 0.001 to 0.005, groundwater infiltration is minimal due to extensive pavement and building foundations in the general area, and HLA's aquifer test data conducted in Site wells estimate a sustained well yield of 0.25 gallons per minute?

Evaluation of historical groundwater monitoring results indicates that TPH impacts reported in well MW-5 did not originate from the Site and offsite migration in groundwater is minor. Lateral migration is limited by the relatively flat gradient, low to moderate permeability in the first-encountered water-bearing zone, and natural attenuation processes.

#4 - No water wells or other sensitive receptors are likely to be impacted.

No surveys were performed for this Site. However, based on several lines of evidence and the general lack of detectable petroleum hydrocarbons in analyzed groundwater samples in well MW-6, no significant offsite groundwater impacts are suspected. Areas downgradient of the Site are primarily commercial for a minimum of 500 feet and high quality drinking water is supplied to the region by municipal water providers.

#5 - The site presents no significant risk to human health.

Site history, UST removal, the age of the original release, and soil and groundwater sampling has demonstrated that no significant petroleum hydrocarbon concentrations exist in shallow soil, impacted soil primarily exists below 10 feet bgs and impacted groundwater is generally deeper than 22 feet bgs. Free product was successfully removed and residual TPHg/BTEX concentrations continue to decrease in groundwater due to natural attenuation processes.

#6 - The site presents no significant risk to the environment.

With the exception of residual impacts in soil from 15 to 25 feet bgs and a relatively localized plume of impacted groundwater, petroleum hydrocarbon sources have been removed from the Site. Groundwater flow direction has consistently been west to west-northwest at a relatively flat gradient approximating 0.004, and no significant offsite migration is suspected. The general lack of detectable petroleum hydrocarbon concentrations in well MW-6 demonstrate that natural attenuation is occurring, and

residual impacts from the former USTs at the Site do not present a significant risk to the environment.

Surface water bodies do not exist within 2,900 feet of the Site and shallow groundwater is not being utilized in the area.

7.0 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.

September 17 2009

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

RE: September 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 September 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.

This report includes additional information requested by Alameda County Environmental Health in its September 10, 2009 letter denying regulatory closure.

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
Senior Geologist

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

Enclosure

SEPTEMBER 2009

GROUNDWATER MONITORING

REPORT

1700 Jefferson Street
Oakland, California

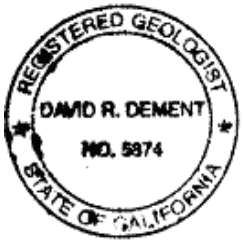
Prepared for:
Mr. David Blain
BPS Reprographic Services
945 Bryant Street
San Francisco, CA 94103

Prepared by:
Environmental Risk Specialties Corporation
Walnut Creek, California

September 17 2009

Reviewed By: _____

David DeMent, PG
Senior Geologist



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APPENDICES

1.0 INTRODUCTION

This September 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, groundwater extraction 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.

Groundwater extraction wells MW-1A and MW-4 were periodically sampled from August 1991 to June 1999. Extraction well water sample analytical results are summarized in Table 1. Monitoring well elevation data is summarized in Table 2, gradient data is summarized in Table 3, and analytical data is summarized in Table 4.

TABLE 1 – EXTRACTION WELL SAMPLE 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)
Extraction Well MW-1A	07/08/87							30
	09/12/88							
	07/12/89							21.6
	08/01/91	350,000	17,000	31,000	3,000	FP	NA	
	07/02/92							18
	09/30/92	FP	FP	FP	FP	FP	NA	10-13
	03/30/93	FP	FP	FP	FP	FP	NA	10.2-14.8
	01/13/94	FP	FP	FP	FP	14,000	NA	
	04/13/94	170,000	17,000	31,000	2,100	22,000	NA	12
	06/29/94	95,000	16,000	21,000	1,500	12,000	NA	4.5+/-
	12/08/94	190,000	13,000	21,000	1,400	11,000	NA	
	04/03/95	67,000	11,000	13,000	910	9,800	NA	0
	06/27/95	53,000	11,000	9,900	500	6,300	NA	
	09/19/95	52,000	8,900	11,000	790	5,300	NA	
	12/13/95	62,000	9,900	9,200	710	6,800	NA	
	03/06/96	200,000	14,000	22,000	2,700	22,000	NA	
	06/11/96	140,000	18,000	28,000	2,800	19,000	NA	
	09/19/96	100,000	16,000	22,000	2,100	14,000	NA	
	12/23/96	FP	FP	FP	FP	FP	NA	
	03/27/97	66,000	12,000	15,000	1,400	100	1,800	
	06/04/97	54,000	11,000	12,000	1,000	7,200	<500	
	09/26/97	73,000	10,000	16,000	1,400	8,500	<500	
	12/23/97	66,000	10,000	16,000	1,400	12,000	1,900	
	03/31/98	51,000	9,100	11,000	1,100	6,800	300	
	06/18/98	50,000	11,000	15,000	870	5,800	<50	
	08/28/98	15,000	1,100	830	31	3,000	<50	
	12/02/98	41,000	8,500	11,000	720	6,700	<50	
	03/10/99	10,000	2,300	1,900	1,600	2,300	<50	
	06/30/99	18,000	6,400	7,800	660	4,100	<25	
Extraction Well MW-4	07/08/87							
	09/12/88							5.9
	07/12/89							25.2
	08/01/91	86,000	1,500	6,200	1,000	FP	NA	18
	09/30/92	FP	FP	FP	FP	FP	NA	
	03/30/93	FP	FP	FP	FP	FP	NA	8.8
	01/13/94	FP	FP	FP	FP	3,200	NA	6.2
	04/13/94	58,000	1,500	2,500	520	7,300	NA	

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)
Extraction Well MW-4 (cont.)	06/29/94	16,000	1,300	790	51	3,400	NA	
	12/08/94	92,000	1,700	4,100	310	5,400	NA	
	04/03/95	35,000	1,200	3,400	280	5,800	NA	
	06/27/95	13,000	1,300	1,600	77	1,800	NA	
	09/19/95	14,000	630	470	14	1,800	NA	
	12/13/95	11,000	2,200	2,100	110	2,100	NA	
	03/06/96	110,000	2,600	3,600	780	10,000	NA	
	06/11/96	260,000	6,600	19,000	3,700	28,000	NA	
	09/19/96	95,000	9,900	19,000	2,000	13,000	NA	
	12/23/96	FP	FP	FP	FP	FP	NA	
	03/27/97	37,000	2,600	6,900	540	5,500	1,400	
	06/04/97	24,000	2,600	3,200	140	3,500	<300	
	09/26/97	41,000	2,900	5,000	350	4,800	<500	
	12/23/97	48,000	6,000	11,000	580	8,200	270	
	03/31/98	NA	NA	NA	NA	NA	NA	
	06/18/98	25,000	2,000	460	<15	6,400	<50	
	08/28/98	48,000	9,700	11,000	890	5,000	<50	
	12/02/98	10,000	1,700	610	<15	2,300	<50	
	03/10/99	11,000	2,300	2,100	88	1,600	<25	
	06/30/99	88,000	1,800	3,000	150	2,700	<25	

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 to 25.5 feet bgs.

3.0 GROUNDWATER MONITORING AND SAMPLING

Groundwater monitoring and sampling of the Site was performed on September 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 2.

TABLE 2 – 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
	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

Well Number	Date Measured	Well Elevation* (feet above MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-1 Cont.	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
	09/03/09	32.36	24.16	8.20
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
	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

Well Number	Date Measured	Well Elevation* (feet above MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-3 Cont.	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
	03/03/09	31.77	23.78	7.99
	09/03/09	31.77	23.55	8.22
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

Well Number	Date Measured	Well Elevation* (feet above MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-5 Cont.	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
	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
	09/03/09	30.56	22.36	8.20
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

Well Number	Date Measured	Well Elevation* (feet above MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-6 Cont.	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
	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

Well Number	Date Measured	Well Elevation* (feet above MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-6 Cont.	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
	09/03/09	31.26	23.49	7.77

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 September 3, 2009, are illustrated on Figure 3. Based on the measured groundwater elevations, calculated groundwater flow direction is to the west-northwest at an average gradient of 0.003 foot per foot. Historical groundwater gradients and flow directions are summarized in Table 3. Thirty-four of 42 calculated groundwater flow directions ranged from northwest to southwest and west was the predominant flow direction.

TABLE 3 - GROUNDWATER GRADIENT AND FLOW DIRECTION

Date Monitored	Reported Gradient	Reported Direction	Actual Gradient	Actual Direction
12/23/96			0.002[2]	S[2]
06/11/96	0.003	SW	0.003	SW
12/06/96			0.002	S
03/27/97			0.001[2]	S-SW[2]
06/04/97	0.009	NW	**<0.0001[2]**	**N-NE**
09/26/97			<0.0006[2]	NE[2]
03/31/98	0.002	W	0.002	W
06/18/98			<0.001	W-NW
08/28/98	0.007	E	0.007	E
12/02/98	0.006	NW	0.006	NW
03/10/99	0.011	NW	0.011	NW
09/29/99	0.004	NW	0.004	NW
02/11/00	0.001	NW	**0.004**	W-NW
05/30/00	0.003	W	0.004	W

Date Monitored	Reported Gradient	Reported Direction	Actual Gradient	Actual Direction
11/16/00	0.044	W	**0.005**	W-NW
04/02/01	0.001	SW	**0.010**	W-SW
06/28/01	0.005	SW	0.005	W-SW
08/30/01	0.004	SW	0.004	W-NW
04/23/02	0.006	W-SW	0.006	SW
06/14/02	0.004	W- SW	0.005	**W- NW**
08/20/02	0.005	W- SW	0.005	**W- NW**
12/27/02	0.005	W- SW	0.005	**W- NW**
04/01/03	0.007	W- SW	**0.001**	**W- NW**
07/01/03	0.006	W-NW	0.004	W-NW
09/24/03	0.005	W-NW	0.005	W-NW
12/29/03	0.003	W-NW	0.005	W-NW
05/18/04	0.006	W	0.004	W
06/30/04	0.002	N	0.002	N-NE
09/23/04	0.005	W	0.005	W
12/28/04	0.045[1]	SE[1]	**0.004**	**NW**
03/16/05	0.010	SW	**0.005**	SW
06/23/05	0.005	W	0.004	W
09/09/05	0.005	W	0.004	W-NW
12/02/05	0.006	NW	0.005	W-NW
03/24/06	0.006	NW	0.005	W-SW
09/13/06	0.005	W-NW	0.005	W-NW
12/13/07	0.004	W-NW	0.005	W-NW
03/26/08	0.004	W	0.005	W
06/02/08	0.004	W	0.005	W
03/03/09	---	---	0.004	W
09/03/09	---	---	0.003	W-NW

Notes: [1] *MACTEC reported an error in groundwater measurement*
[2] *Value added or changed 9/17/09*

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 ±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, four 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 4.

TABLE 4 – 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							10
	03/30/93							
	01/13/94							14.8
	04/13/94							12
	06/29/94							0
	12/08/94							FP

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)
	04/03/95							FP
	06/27/95							FP
MW-1	09/19/95							FP
Cont.	12/13/95							FP
	03/06/96							FP
	06/11/96							FP
	09/19/96							FP
	12/23/96							FP
	03/27/97							FP
	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	
	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	

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)
	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	
MW-1	06/23/05	30,000	5,400	5,500	520	1,900	<1,200	
Cont.	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	
	09/03/09	35,900	5,570	5,180	620	3,270	<100	
MW-3	07/08/87							0
	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		
	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	

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)
	03/31/98	32,000	690	3,800	870	5,200	350	
	06/18/98	16,000	180	1,500	490	3,700	<25	
MW-3	08/28/98	17,000	84	1,100	430	3,800	<50	
Cont.	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	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	
	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	

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)
	12/13/07	2,900	250	170	66	120	<25	
	03/26/08	2,300	340	95	26	64	<25	
MW-3	06/02/08	2,300	270	250	59	130	<25	
Cont.	03/03/09	3,020	37.1	10	3.8[J]	12.3[J]	<10	
	09/03/09	538	58.8	1.2	13.1	1.5	<1.0	
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		0.06
	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	
	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	

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)
	09/15/00	24,000	3,800	3,000	460	1,200	<10	
	11/16/00	1,800	470	220	39	100	<5	
MW-5	04/02/01	15,000	7,400	3,000	1,000	2,200	<50	
Cont.	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	
	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	
	09/03/09	35,900	8,800	1,240	1,720	2,420	<100	
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	

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.	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	<0.05	<0.5	<0.5	<2.5	
	04/01/03	<50	<0.5	<0.05	<0.5	<0.5	<2.5	
	07/01/03	<50	<0.5	<0.05	<0.5	<2.5	<2.5	
	09/25/03	<50	<0.5	<0.05	<0.5	<2.5	<2.5	
	12/29/03	<50	<0.5	<0.05	<0.5	<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	
	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	

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.	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	
	09/03/09	<50	<1.0	<1.0	<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-northwest at an average gradient of 0.003 foot per foot. During the last 35 groundwater monitoring and sampling events (March 1998 to September 2009), the calculated groundwater flow direction has ranged from northwest to west-southwest (255° to 315°) **31 times**. Specifically, the calculated groundwater flow direction was either west or west-northwest (270° to 292°) **22 times**. The calculated groundwater flow direction was north-northeast **1 time**. Since June 2001, the groundwater gradient has consistently ranged from 0.001 to 0.005 foot per foot.

The concentration of TPHg increased slightly in well MW-1, decreased in well MW-3, and decreased in offsite well MW-5. BTEX concentrations fluctuated in wells MW-1, MW-3, and offsite well MW-5. Consistent with previous sampling results, MTBE was not reported above laboratory reporting limits in any of the wells and is not a constituent of concern. Consistent with previous sampling results, TPHg and BTEX were not reported above laboratory reporting limits in well MW-6.

Several lines of evidence suggest that petroleum hydrocarbon impacts reported in groundwater in well MW-5 originate from an unknown offsite source. Evidence for this offsite source of petroleum hydrocarbon impact includes: 1) despite elevated petroleum hydrocarbons being reported in groundwater in well MW-1 over time, almost no detectable petroleum hydrocarbons have been reported in groundwater in well MW-6, located approximately 100 feet in the confirmed downgradient direction during the same timeframe; 2) decreased concentrations of TPHg and BTEX in onsite well MW-1 and MW-

3 are consistent with remedial activities performed at the Site while reported concentrations of TPHg and BTEX in offsite well MW-5 (located approximately 160 feet north of the former USTs) represent slow decreasing trends associated with natural attenuation processes; 3) from June 1996 to September 2009, the predominant groundwater flow direction is west to west-northwest and fluctuates almost exclusively from northwest to southwest; 4) groundwater plume definition work performed north of well MW-5 in March 1998 reported almost no petroleum hydrocarbon impacts in groundwater, which is consistent with the calculated groundwater flow direction; 5) BTEX ratios in wells MW-1, MW-3, and MW-5 indicate that wells MW-1 and MW-5 are in proximity to a source of petreolum hydrocarbon contamination; and 6) a characteristic concrete repair exists in the sidewalk adjacent to well MW-5 that looks like a UST was removed.

5.1 BTEX Ratios

ERS understands that *Ground-Water Contaminant Plume Differentiation and Source Determination Using BTEX Concentration Ratios* (Yang, Spencer, Mersmann, Gates) published in November 1995, is used by the SWRCB when evaluating commingled plumes and suspect offsite sources. This document states that: 1) computer modeling shows that hydraulic dispersion, retardation, and biodegradation do not significantly modify the BTEX concentration ratios in ground water, particularly those of ethylbenzene and xylenes; 2) BTEX composition in ground water contaminated from different contaminant sources is often distinctive and source-specific; 3) under certain conditions, biodegradation rates for benzene, ethylbenzene, and xylenes are similar at approximately 1% per day; 4) BTEX concentration ratios in ground water, particularly xylenese/ethylbenzene, largely reflect BTEX compositional characteristics of the contaminant source; and 5) concentration ratios of benzene, ethylbenzene, and xylenes are likely to be similar in ground-water contaminant plume[(s)] derived from a single source.
BTEX ratios as a percentage of the reported TPHg for the March and September 2009 well monitoring and sampling events are summarized in Table 5.

TABLE 5 – BTEX RATIOS AS A PERCENTAGE OF TPHg

Well Number	Date Sampled	All BTEX	Benzene	Toluene	Ethyl-benzene	Total Xylenes
MW-1	03/03/09	42.8%	16.2%	16.2%	1.8%	8.4%
	09/03/09	40.8%	15.5%	14.4%	1.7%	9.1%
MW-3	03/03/09	2.1%	1.2%	0.3%	0.1%	0.4%
	09/03/09	13.9%	10.9%	0.2%	2.4%	0.3%
MW-5	03/03/09	43.2%	26.9%	8.2%	3.0%	5.0%
	09/03/09	39.5%	24.5%	3.4%	4.8%	6.7%

Generally, BTEX ratios were consistent between the two respective sampling events in wells MW-1 and MW-5, but varied considerably in well MW-3. Ethylbenzene and xylenes ratios during the two events in wells MW-1, MW-3, and MW-5 demonstrated no distinct correlation. The ratio of combined BTEX to the reported TPHg in wells MW-1 and MW-5 did show good correlation, and appear to indicate proximity to a source of impact.

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-northwest at an average gradient of 0.003 foot per foot and continues to be consistent with historical trends and regional topography;

- Reported TPHg increased slightly in onsite well MW-1 and decreased in onsite well MW-3, and reported TPHg decreased in offsite well MW-5;

- Reported BTEX concentrations generally fluctuated slightly in onsite wells MW-1 and MW-3 and decreased or were generally unchanged in offsite well MW-5;

- Consistent with recent trends, no detectable TPHg and BTEX concentrations were reported in downgradient well MW-6;

- Reported total TPHg / BTEX concentrations in well MW-5, BTEX ratios in well MW-1 and MW-5, and a predominant west to west-northwest groundwater flow direction, suggest an offsite unknown source of petroleum hydrocarbon impact to groundwater in the general vicinity of well MW-5; and

- Natural attenuation processes are continuing to degrade residual petroleum hydrocarbons in groundwater as evidenced by the significantly lower TPHg and BTEX concentrations being reported in wells MW-3 and 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 confirm that an offsite petroleum hydrocarbon source is impacting groundwater in the vicinity of well MW-5; and

- Continue future groundwater sampling in monitoring wells MW1, MW-3, MW-5, and MW-6 on a semi-annual basis as necessary, and sample extraction well MW-4 annually as necessary.

Therefore, the next tentatively scheduled groundwater monitoring event is March 3, 2010.

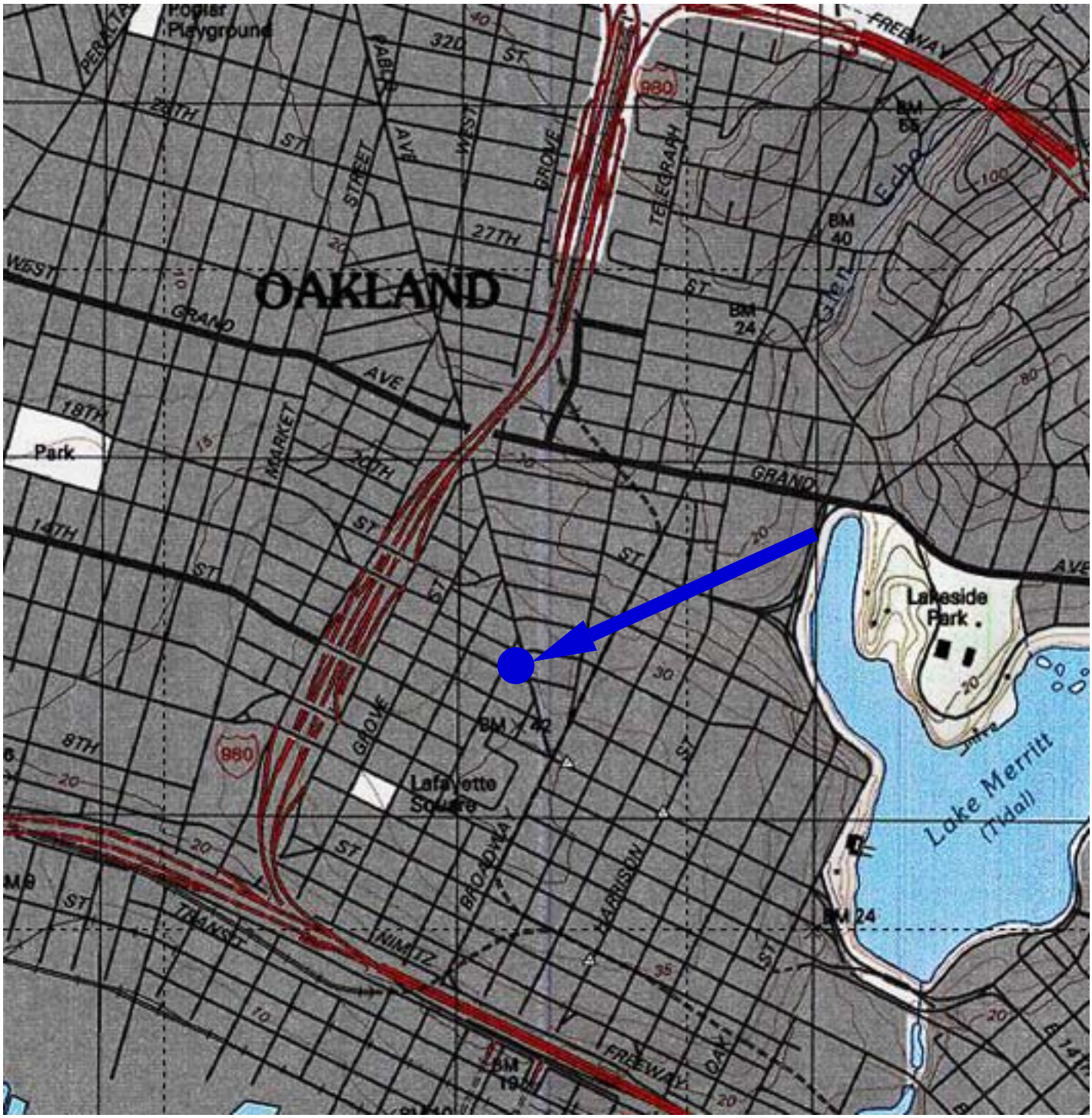
8.0 LIMITATIONS

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.

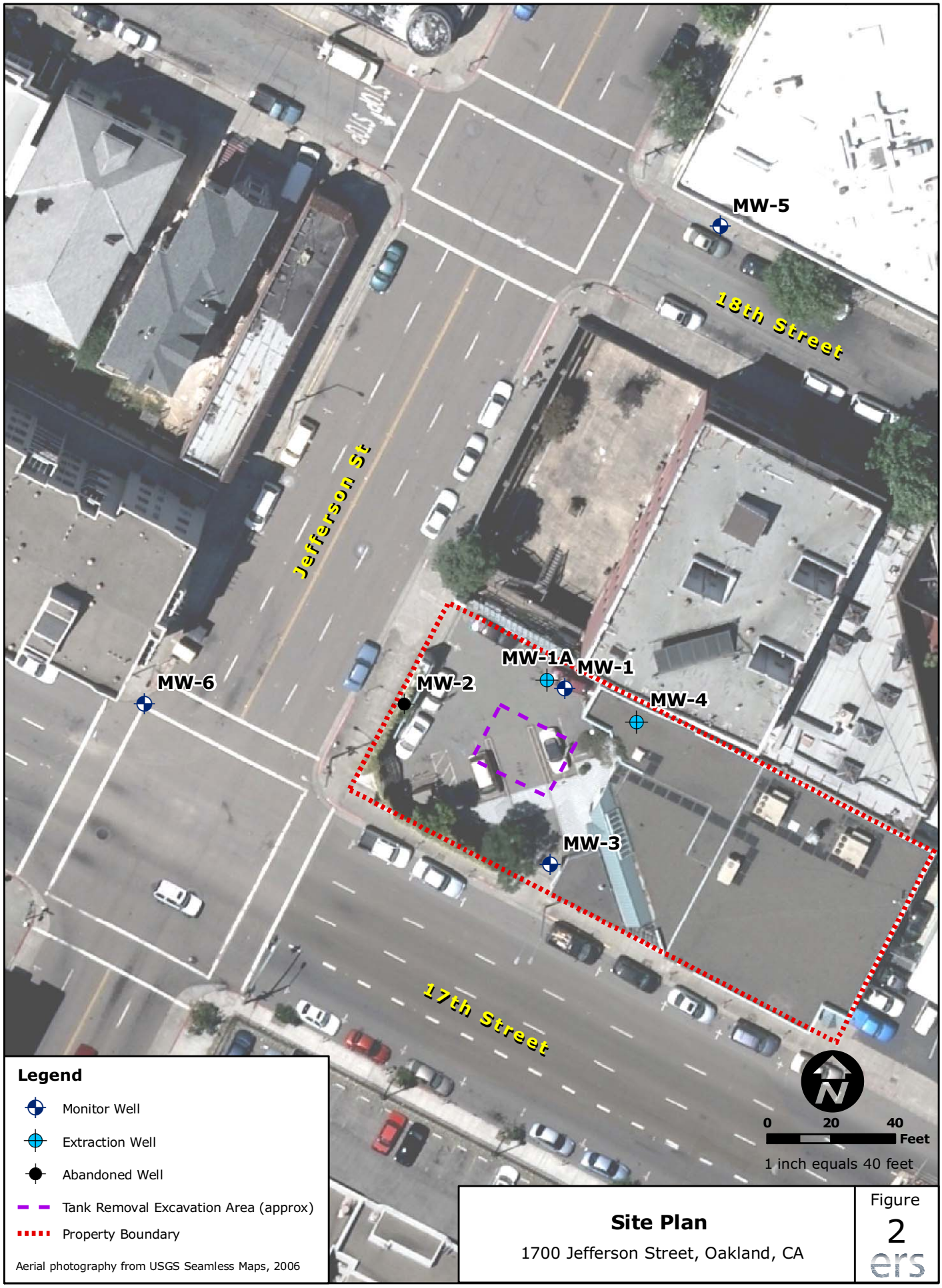
FIGURES



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

Figure 1

ERS Corporation

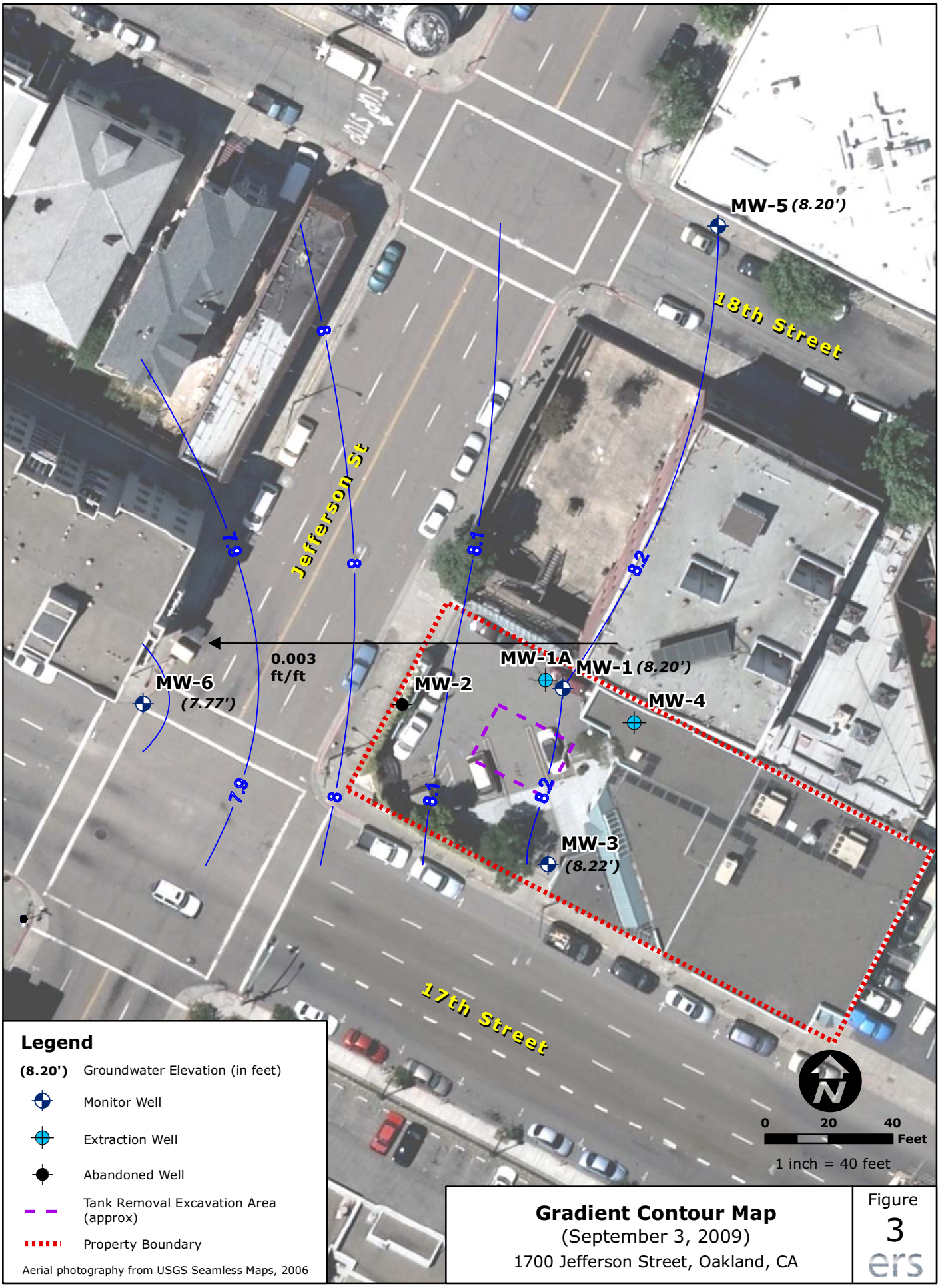


Site Plan

1700 Jefferson Street, Oakland, CA

Figure 2

ERS Corporation



Legend

- (8.20') Groundwater Elevation (in feet)
- Monitor Well
- Extraction Well
- Abandoned Well
- Tank Removal Excavation Area (approx)
- Property Boundary

Aerial photography from USGS Seamless Maps, 2006

Gradient Contour Map

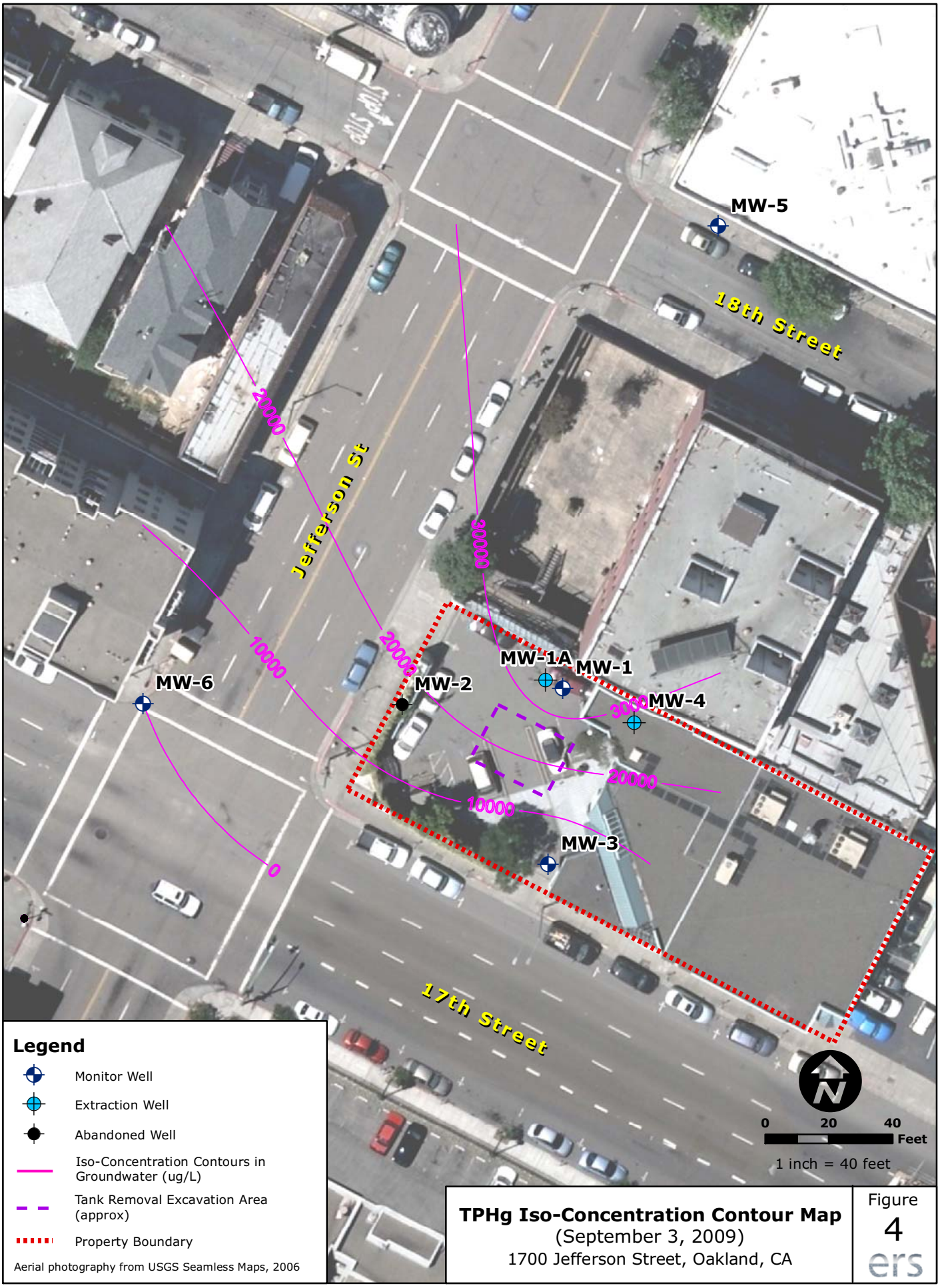
(September 3, 2009)

1700 Jefferson Street, Oakland, CA

Figure 3

ers

ERS Corporation

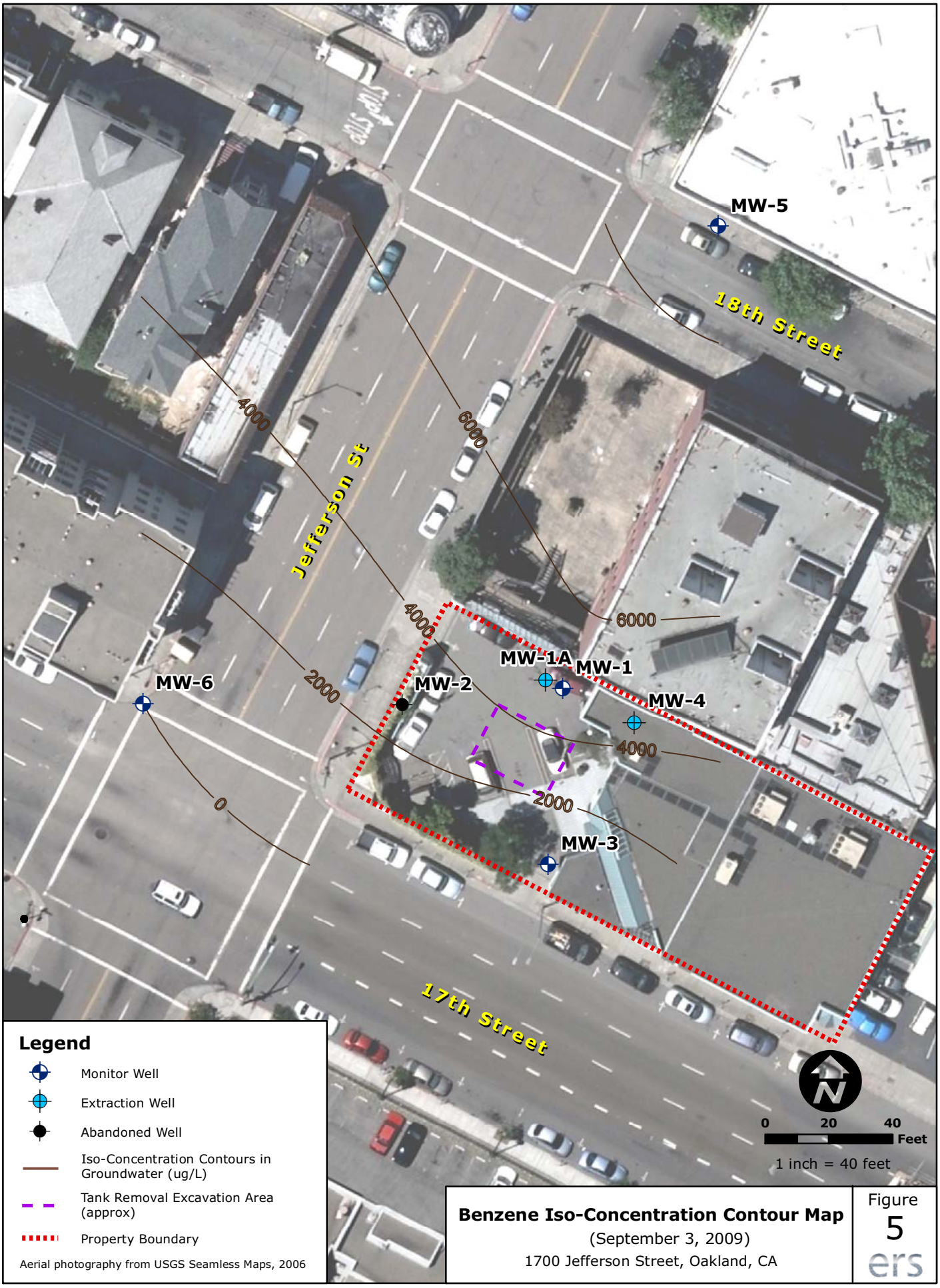


TPHg Iso-Concentration Contour Map
(September 3, 2009)
1700 Jefferson Street, Oakland, CA

Figure 4

ers

ERS Corporation



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

Benzene Iso-Concentration Contour Map
(September 3, 2009)
1700 Jefferson Street, Oakland, CA

Figure 5

ers

ERS Corporation

APPENDIX 1

Depth to Water Data Sheet

Site Name: 1700 Jefferson | Date: 9/3/09

Location: Oakland, CA | Field Tech: LTL

Client: BPS Reprographics

Well ID	Well Diameter	Time	DTW	Total Depth	Comments
MW-1	4"	1059	24.16		
MW-1A	4"	1056	22.58		
MW-2	—	~~decommissioned~~			— abandoned —
MW-3	4"	1053	23.55		
MW-4	4"	1050	24.02		
MW-5	2"	1044	22.36		
MW-6	2"	1047	23.49		

Notes:

Monitor Well Data Sheet

Site Name: 1700 Jefferson	Well/Sample ID: MW-1
Location: Oakland, CA	Initial Depth to Water (DTW): 24.16
Client: BPS	Total Well Depth (TD):
Sampler: LTL	Well Diameter: 4"
Date: 9/3/09	1 Casing Volume: —
Purge Method: Peristaltic Pump	Purge Rate: 0.25 L/min
Sample Method: Low Flow	Sampling Rate: 0.2 L/min
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	µmhos/cm	mg/l	°F	feet	liters	mV	
1247	6.63	1300	0.01	19.79	24.37	1	-167	
1251	6.59	1300	0.01	19.79	24.33	2	-178	
1255	6.60	1300	0.01	19.74	24.32	3	-180	
1259	6.61	1300	0.01	19.78	24.32	4	-184	

Did Well Dewater?	No	Start Purge Time:	1243	DTW prior to sample:	24.32
Casing volumes Purged:	—	Stop Purge Time:	1259	Start Sample Time:	1259
Length of Tubing (ft):		Total Liters Purged:	4	Total Sample Volume:	160 mL
Well Recharge:	good	Turbidity:	low	Color:	black
Odor:	TPH	Sheen:	none	Product Thinkness (in):	N/A

Notes:

Monitor Well Data Sheet

Site Name: 1700 Jefferson	Well/Sample ID: MW-3
Location: Oakland, CA	Initial Depth to Water (DTW): 23.55
Client: BPS	Total Well Depth (TD):
Sampler: LTL	Well Diameter: 4"
Date: 9/3/09	1 Casing Volume: /
Purge Method: Peristaltic Pump	Purge Rate: 0.25 L/min
Sample Method: Low Flow	Sampling Rate: 0.2 L/min
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	µmhos/cm	mg/l	°F	feet	liters	mV	
1218	6.56	770	0.01	20.96	23.71	1	-128	
1222	6.45	770	0.01	20.90	23.78	2	-130	
1224	6.38	770	0.01	20.83	23.80	3	-132	
1228	6.36	770	0.01	20.75	23.83	4	-136	
1232	6.37	770	0.01	20.80	23.86	5	-140	

Did Well Dewater?	No	Start Purge Time:	1214	DTW prior to sample:	23.86
Casing volumes Purged:	/	Stop Purge Time:	1232	Start Sample Time:	1232
Length of Tubing (ft):		Total Liters Purged:	5	Total Sample Volume:	160mL
Well Recharge:	good	Turbidity:	v. low	Color:	none
Odor:	none	Sheen:	none	Product Thinkness (in):	N/A

Notes:

Monitor Well Data Sheet

Site Name: 1700 Jefferson	Well/Sample ID: MW-5
Location: Oakland, CA	Initial Depth to Water (DTW): 22.36
Client: BPS Reprographics	Total Well Depth (TD):
Sampler: LTL	Well Diameter: 2"
Date: 9/3/09	1 Casing Volume: —
Purge Method: Peristaltic Pump	Purge Rate: 0.25 L/min
Sample Method: Low Flow	Sampling Rate: 0.2 L/min
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	µmhos/cm	mg/l	°F	feet	liters	mV	
1110	6.66	1000	0.01	20.49	22.50	1	-114	
1114	6.65	900	0.01	20.51	22.56	2	-137	
1118	6.76	900	0.01	20.42	22.57	3	-152	
1122	6.80	890	0.01	20.41	22.58	4	-164	
1126	6.85	890	0.01	20.38	22.58	5	-172	
1130	6.88	900	0.01	20.40	22.58	6	-177	

Did Well Dewater?	No	Start Purge Time:	1106	DTW prior to sample:	22.58
Casing volumes Purged:	—	Stop Purge Time:	1130	Start Sample Time:	1130
Length of Tubing (ft):		Total Liters Purged:	6	Total Sample Volume:	160 mL
Well Recharge:	good	Turbidity:	very low	Color: none	
Odor:	slight TPH	Sheen:	no	Product Thinkness (in):	N/A

Notes:

Monitor Well Data Sheet

Site Name: 1700 Jefferson	Well/Sample ID: MW-6
Location: Oakland, CA	Initial Depth to Water (DTW): 23.49
Client: BPS Reprographics	Total Well Depth (TD):
Sampler: LTL	Well Diameter: 2"
Date: 9/3/09	1 Casing Volume: —
Purge Method: Peristaltic Pump	Purge Rate: 0.25 L/min
Sample Method: Low Flow	Sampling Rate: 0.2 L/min
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	µmhos/cm	mg/l	°C	feet	liters	mV	
1146	6.75	900	0.01	21.85	23.65	1	-29	
1150	6.67	900	0.01	21.79	23.67	2	7	
1154	6.62	900	0.01	21.78	23.69	3	23	
1158	6.58	900	0.01	21.86	23.70	4	38	
1202	6.58	900	0.01	21.85	23.70	5	45	

Did Well Dewater?	No	Start Purge Time:	1142	DTW prior to sample:	23.70
Casing volumes Purged:	—	Stop Purge Time:	1202	Start Sample Time:	1202
Length of Tubing (ft):		Total Liters Purged:	5	Total Sample Volume:	160 mL
Well Recharge:	good	Turbidity:	V. low	Color:	none
Odor:	none	Sheen:	none	Product Thinkness (in):	N/A

Notes:

APPENDIX 2

Technical Report for

ERS Corporation

T0600100196-1700 Jefferson, Oakland, CA

Accutest Job Number: C7382

Sampling Date: 09/03/09

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**

ACCUTEST LABORATORIES 50 YEARS 1956-2006

ACCREDITED IN ACCORDANCE WITH nelac

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)

Test results relate only to samples analyzed.

Sections: 1 2 3 4

Table of Contents

Sample Summary

ERS Corporation

Job No: C7382

T0600100196-1700 Jefferson, Oakland, CA

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
C7382-1	09/03/09	12:59	LL	09/04/09	AQ	Ground Water	MW-1
C7382-2	09/03/09	12:32	LL	09/04/09	AQ	Ground Water	MW-3
C7382-3	09/03/09	11:30	LL	09/04/09	AQ	Ground Water	MW-5
C7382-4	09/03/09	12:02	LL	09/04/09	AQ	Ground Water	MW-6

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-1		
Lab Sample ID:	C7382-1	**Date Sampled:**	09/03/09
Matrix:	AQ - Ground Water	**Date Received:**	09/04/09
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	T0600100196-1700 Jefferson, Oakland, CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W8170.D	100	09/10/09	BD	n/a	n/a	VW286
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	5570	100	30	ug/l	
108-88-3	Toluene	5180	100	50	ug/l	
100-41-4	Ethylbenzene	620	100	30	ug/l	
1330-20-7	Xylene (total)	3270	200	70	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	100	50	ug/l	
	TPH-GRO (C6-C10)	35900	5000	2500	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		60-130%
2037-26-5	Toluene-D8	105%		60-130%
460-00-4	4-Bromofluorobenzene	105%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-3		
Lab Sample ID:	C7382-2	**Date Sampled:**	09/03/09
Matrix:	AQ - Ground Water	**Date Received:**	09/04/09
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	T0600100196-1700 Jefferson, Oakland, CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W8181.D	1	09/10/09	BD	n/a	n/a	VW287
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	58.8	1.0	0.30	ug/l	
108-88-3	Toluene	1.2	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	13.1	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	1.5	2.0	0.70	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
	TPH-GRO (C6-C10)	538	50	25	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		60-130%
2037-26-5	Toluene-D8	107%		60-130%
460-00-4	4-Bromofluorobenzene	106%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-5		
Lab Sample ID:	C7382-3	**Date Sampled:**	09/03/09
Matrix:	AQ - Ground Water	**Date Received:**	09/04/09
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	T0600100196-1700 Jefferson, Oakland, CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W8188.D	100	09/10/09	BD	n/a	n/a	VW287
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	8800	100	30	ug/l	
108-88-3	Toluene	1240	100	50	ug/l	
100-41-4	Ethylbenzene	1720	100	30	ug/l	
1330-20-7	Xylene (total)	2420	200	70	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	100	50	ug/l	
	TPH-GRO (C6-C10)	35900	5000	2500	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		60-130%
2037-26-5	Toluene-D8	105%		60-130%
460-00-4	4-Bromofluorobenzene	105%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-6		
Lab Sample ID:	C7382-4	**Date Sampled:**	09/03/09
Matrix:	AQ - Ground Water	**Date Received:**	09/04/09
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	T0600100196-1700 Jefferson, Oakland, CA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W8183.D	1	09/10/09	BD	n/a	n/a	VW287
Run #2							

	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	ND	1.0	0.50	ug/l	
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	102%		60-130%
2037-26-5	Toluene-D8	106%		60-130%
460-00-4	4-Bromofluorobenzene	106%		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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST Laboratories

2235 Route 130, Dayton, NJ 08810
732-329-0200 FAX: 732-329-3499/3480

"ERSCCAWC1795" C7382

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job #

Client / Reporting Information | **Project Information**

Company Name: ERS	Project Name: 1700 Jefferson
Address: 1600 Riviera Ave Suite 310	Street: 1700 Jefferson
City / State / Zip: Walnut Creek, CA 94596	City / State: Oakland, CA
Project Contact: Dave Dement; E-mail: ddement@erscorp.us	Project #
Phone #: (925) 938-1600	Fax #
Samplers's Name: L. Linderman	Client Purchase Order #

Requested Analysis

8260 ☐ 8021 ☐ 602 ☐ BTEX ☐ MTBE ☐ TBA ☐ NAP ☐
8260 ☐ 624 ☐ TCL ☐ PPL ☐ STARS ☐ MTBE ☐ TBA ☐ NAP ☐ +10 ☐ +15 ☐
8270 ☐ 625 ☐ TCL ☐ PPL ☐ STARS ☐ ABNs ☐ AEs ☐ BNs ☐ PAHs ☐ +TICs ☐
TPHg, BTEX, MTBE (8260)

Matrix Codes

DW- Drinking Water
GW- Ground Water
WW- Water
SW- Surface Water
SO- Soil
SL-Sludge
OI-Oil
LIQ- Other Liquid
AIR- Air
SOL-Other Solid
WP-Wipe

Accutest Sample #	Field ID / Point of Collection	SUMMA # / MEOH Vial #	Collection: Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	LAB USE ONLY
-1	MW-1		9/3/09	1259	LTL	W	4	X				X				
-2	MW-3			1232				X				X				
-3	MW-5			1130				X				X				
-4	MW-6			1202				X				X				

Turnaround Time (Business days)

- [X] Std. 15 Business Days
- [ ] ~~10 Day RUSH~~
- [ ] ~~5 Day RUSH~~
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*
- [ ] Other

Approved By:/ Date:

Emergency T/A data available VIA Lablink

Data Deliverable Information

- [X] Commercial "A"
- [ ] Commercial "B"
- [ ] NJ Reduced
- [ ] NJ Full
- [ ] Other _____
- [ ] FULL CLP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [X] EDD Format Geotracker
  Global ID: T0600100196

Commercial "A" = Results Only

Comments / Remarks

4 Vials 4 Each (w/ HCl)

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		9/4/09 12:32	1	2	9/4/09 14:18	2
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4 9/4/09 14:18
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable ☑	On Ice ☒ Cooler Temp. 5.1°C

C7382: Chain of Custody
Page 1 of 1

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: C7382
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW286-MB2	W8154.D	1	09/09/09	BD	n/a	n/a	VW286

The QC reported here applies to the following samples: **Method:** SW846 8260B

C7382-1

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	107%	60-130%
2037-26-5	Toluene-D8	104%	60-130%
460-00-4	4-Bromofluorobenzene	106%	60-130%

Method Blank Summary

Job Number: C7382
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW287-MB	W8180.D	1	09/10/09	BD	n/a	n/a	VW287

The QC reported here applies to the following samples: **Method:** SW846 8260B

C7382-2, C7382-3, C7382-4

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	104%	60-130%
2037-26-5	Toluene-D8	104%	60-130%
460-00-4	4-Bromofluorobenzene	107%	60-130%

Method Blank Summary

Job Number: C7382
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW286-MB	W8144.D	1	09/09/09	BD	n/a	n/a	VW286

The QC reported here applies to the following samples: **Method:** SW846 8260B

VW286-BS

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	106%	60-130%
460-00-4	4-Bromofluorobenzene	105%	60-130%

Blank Spike Summary

Job Number: C7382
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW286-BS	W8141.D	1	09/09/09	BD	n/a	n/a	VW286

The QC reported here applies to the following samples: **Method:** SW846 8260B

C7382-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	18.3	92	60-130
100-41-4	Ethylbenzene	20	18.6	93	60-130
1634-04-4	Methyl Tert Butyl Ether	20	18.6	93	60-130
108-88-3	Toluene	20	17.7	89	60-130
1330-20-7	Xylene (total)	60	55.5	93	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	109%	60-130%
2037-26-5	Toluene-D8	105%	60-130%
460-00-4	4-Bromofluorobenzene	108%	60-130%

Blank Spike Summary

Job Number: C7382
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW286-BS	W8143.D	1	09/09/09	BD	n/a	n/a	VW286

The QC reported here applies to the following samples: **Method:** SW846 8260B

C7382-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
	TPH-GRO (C6-C10)	125	115	92	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	60-130%
2037-26-5	Toluene-D8	106%	60-130%
460-00-4	4-Bromofluorobenzene	105%	60-130%

Blank Spike Summary

Job Number: C7382
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW287-BS	W8177.D	1	09/10/09	BD	n/a	n/a	VW287

The QC reported here applies to the following samples: **Method:** SW846 8260B

C7382-2, C7382-3, C7382-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	18.3	92	60-130
100-41-4	Ethylbenzene	20	18.6	93	60-130
1634-04-4	Methyl Tert Butyl Ether	20	18.7	94	60-130
108-88-3	Toluene	20	17.7	89	60-130
1330-20-7	Xylene (total)	60	55.2	92	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	107%	60-130%
2037-26-5	Toluene-D8	106%	60-130%
460-00-4	4-Bromofluorobenzene	108%	60-130%

Blank Spike Summary

Job Number: C7382
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW287-BS	W8179.D	1	09/10/09	BD	n/a	n/a	VW287

The QC reported here applies to the following samples: **Method:** SW846 8260B

C7382-2, C7382-3, C7382-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
	TPH-GRO (C6-C10)	125	112	90	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	60-130%
2037-26-5	Toluene-D8	106%	60-130%
460-00-4	4-Bromofluorobenzene	107%	60-130%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C7382
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C7365-8MS	W8172.D	1	09/10/09	BD	n/a	n/a	VW286
C7365-8MSD	W8173.D	1	09/10/09	BD	n/a	n/a	VW286
C7365-8	W8169.D	1	09/10/09	BD	n/a	n/a	VW286

The QC reported here applies to the following samples: **Method:** SW846 8260B

C7382-1

CAS No.	Compound	C7365-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		20	18.3	92	17.8	89	3	60-130/25
100-41-4	Ethylbenzene	ND		20	18.3	92	17.7	89	3	60-130/25
1634-04-4	Methyl Tert Butyl Ether	ND		20	19.1	96	18.3	92	4	60-130/25
108-88-3	Toluene	ND		20	17.7	89	17.0	85	4	60-130/25
1330-20-7	Xylene (total)	ND		60	53.7	90	51.8	86	4	60-130/25

CAS No.	Surrogate Recoveries	MS	MSD	C7365-8	Limits
1868-53-7	Dibromofluoromethane	104%	106%	105%	60-130%
2037-26-5	Toluene-D8	105%	105%	105%	60-130%
460-00-4	4-Bromofluorobenzene	107%	109%	107%	60-130%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C7382
Account: ERSCCAWC ERS Corporation
Project: T0600100196-1700 Jefferson, Oakland, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C7343-3MS	W8197.D	1	09/10/09	BD	n/a	n/a	VW287
C7343-3MSD	W8198.D	1	09/10/09	BD	n/a	n/a	VW287
C7343-3	W8184.D	1	09/10/09	BD	n/a	n/a	VW287

The QC reported here applies to the following samples: **Method:** SW846 8260B

C7382-2, C7382-3, C7382-4

CAS No.	Compound	C7343-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		20	18.8	94	20.8	104	10	60-130/25
100-41-4	Ethylbenzene	ND		20	18.8	94	20.8	104	10	60-130/25
1634-04-4	Methyl Tert Butyl Ether	ND		20	20.0	100	22.2	111	10	60-130/25
108-88-3	Toluene	ND		20	18.1	91	19.9	100	9	60-130/25
1330-20-7	Xylene (total)	ND		60	55.9	93	61.6	103	10	60-130/25

CAS No.	Surrogate Recoveries	MS	MSD	C7343-3	Limits
1868-53-7	Dibromofluoromethane	108%	106%	103%	60-130%
2037-26-5	Toluene-D8	105%	105%	106%	60-130%
460-00-4	4-Bromofluorobenzene	108%	109%	105%	60-130%

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

September 10, 2009

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

Subject: Fuel Leak Case No. RO0000151 and Geotracker Global ID T0600100196, City Blue Print, 1700 Jefferson Street, Oakland, CA 94612

Dear Mr. Blain:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the site including the most recently submitted documents entitled *Request for Regulatory Closure* dated June 3, 2009 and the March 2009 Groundwater Monitoring Report dated March 19, 2009 both prepared by Environmental Risk Specialties Corporation (ERS). The request for case closure appears to be based on ERS' hypothesis that the hydrocarbon contamination is localized around the original source area and that the high concentration of total petroleum hydrocarbons as gasoline (TPHg) and benzene in MW-5 is due to an unknown off-site source.

A review of the site history indicates that the hypothesis that MW-5 is impacted by an off-site source is not substantiated. In June 1987, the USTs were removed and wells MW-1 through MW-3 were installed. Well MW-1, immediately adjacent to the underground storage tank (UST) had 30 inches of separate phase hydrocarbons (SPH) at the time of installation and groundwater extraction was implemented in September 1987 to remove SPH. Wells MW-1A and MW-4 were installed as remediation wells in January 1988, MW-1A was installed to replace MW-1 which had been degraded by the SPH in the well and MW-4 was installed to aid with SPH removal. MW-5 was installed to the north 160 feet downgradient of well MW-1 in August 1988 and contained 0.36 inches of SPH. Groundwater monitoring reports through 1996 also indicate that the groundwater flow direction was to the north to northwest. Groundwater extraction was performed in on-site wells MW-1A and MW-4 from 1992 to 1999 until all SPH was removed from on-site wells (an estimated 5,062 pounds). However, no SPH removal was performed in off-site monitoring wells. Oxygen releasing compound (ORC) socks were then installed in wells MW-1A, MW-3, MW-4 and MW-5 and were removed in 2002. Petroleum hydrocarbon concentrations showed a decrease in concentrations during ORC installation in well MW-5. These results appear biased low since the wells with the ORC deployed were the wells sampled. This is further substantiated since contaminant concentrations in MW-5 have rebounded to pre-1999 levels after the ORC socks were removed and up to 11,700 µg/L benzene is currently being detected in groundwater.

Also, additional data gaps appear to exist at the site including: consideration of the vapor pathway, evaluation of potential risk to adjacent apartments and buildings identified as having basements and a sunken courtyard, the lines of evidence that support the hypothesis that MW-5

is impacted from an off-site source and other data gaps identified in the technical comments below. Therefore, ACEH cannot consider case closure for the subject site at this time. This decision to deny closure is subject to appeal to the State Water Resources Control Board (SWRCB), pursuant to Section 25299.39.2(b) of the Health and Safety Code (Thompson-Richter Underground Storage Tank Reform Act - Senate Bill 562). Please contact the SWRCB Underground Storage Tank Program at (916) 341-5851 for information regarding the appeals process.

TECHNICAL COMMENTS

1. **Delineation of Contamination in Source Area** – A maximum concentration of 8,800 milligrams per kilogram (mg/kg) total volatile hydrocarbons (TVH) was detected in soil from the UST excavation at a depth of 6.5 feet below ground surface (bgs). Up to 3,300 mg/kg TVH was detected in soil from boring B5 at a depth of 24 feet bgs. No deeper soil samples were collected during the subsequent investigations and minimal samples were collected from the well borings, leaving the lateral and vertical extent of contamination undefined in the source area. In addition, soil removed from the site was aerated and reused on-site with no confirmation sampling results reported. Free product was encountered at up to 30 inches in MW-1 in 1987 but later appeared at a thickness of 4 inches in 1991 in cross-gradient well MW-3, 60 feet away, leaving the extent of free product undefined. Please submit a proposal to define the vertical and lateral extent of contamination in the source area in the work plan requested below.

2. **Dissolved Plume Definition** - ACEH requested that the lateral extent of the dissolved plume be defined in a previous letter dated February 13, 2004. MACTEK's May 12, 2004 Work Plan response states that TPHg concentrations have generally been reduced an order of magnitude and therefore concluded that the "plume is relatively stable and laterally defined". A proposal to evaluate the extent of the dissolved plume was not presented in the work plan. However, since 2002 when ORC socks were removed from the wells that were being monitored, concentrations in well MW-5 have increased to pre-1999 levels indicating that ORC socks were not effective in reducing contamination and that significant mass may still be present at the site. In addition, HLA's Phase I review of the site performed in 1989 did not identify an off-site contamination source and concluded that the site is the source of the product at MW-5. Therefore, we request that you submit a work plan to define the lateral extent of the dissolved hydrocarbon plume by the date requested below.

3. **Well Survey** – We request that you perform a well survey to complete the survey of the potential migration pathways and potential conduits for vertical and lateral migration that may be present in the vicinity of the site. The well survey should include a survey of all wells (monitoring and production wells: active, inactive, standby, decommissioned (sealed with concrete), abandoned (improperly decommissioned or lost); and dewatering, drainage, and cathodic protection wells) within a ¼-mile radius of the subject site.

4. **Site Conceptual Model** – As no conceptual model for the release has been presented to date, at this juncture, it appears appropriate to develop a site conceptual model (SCM). The SCM synthesizes all the analytical data and evaluates all potential exposure

pathways and potential receptors that may exist at the site, including identifying or developing site cleanup objectives and goals. At a minimum, the SCM should include:
(1) Local and regional plan view maps that illustrate the location of sources (former facilities, piping, tanks, etc.) extent of contamination, direction and rate of groundwater flow, potential preferential pathways, and locations of receptors;
(2) Update geologic cross-sections to illustrate subsurface features, man-made conduits, and lateral and vertical extent of contamination;
(3) Plots of chemical concentrations versus time, plotted with distance;
(4) Update tables to include all historical groundwater data and wells prior to plotting;
(5) Summary tables of chemical concentrations in different media (i.e. soil, groundwater, and soil vapor);
(6) Well logs, boring logs, and well survey maps;
(7) Discuss likely contaminant fate and transport;
(8) Assess the potential for vapor migration to adjacent buildings, basements, etc.; and
(9) Documentation to support ERS' hypothesis of an off-site source for SPH in MW-5.

If data gaps (i.e. plume/source definition, potential contaminant volatilization to indoor air or contaminant migration along preferential pathways, etc.) are identified in the SCM, please include a proposed scope of work to address those data gaps in the work plan due by the date specified below. Please note that the work plan must address all technical comments presented in our December 11, 2006 correspondence and all data gaps identified in the SCM.

5. **Data Tables** – ACEH's February 13, 2004 letter requested that all data be tabulated and that a rose diagram be added to monitoring reports. To date, this data has not been presented. Further, the data table in your June 3, 2009 report omits data from MW-1 and MW-4. Omitting this data makes it appear that off-site concentrations were always higher than on-site concentrations, which was not the case. Please tabulate all data on your data tables and include groundwater elevations on the same table.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Barbara Jakub), according to the schedule presented below:

- **December 7, 2009** – SCM with Work Plan to investigate data gaps

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities.

Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/electronic_submittal/report_rqmts.shtml.

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety

Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

If you have any questions, please call me at (510) 639-1287 or send me an electronic mail message at barbara.jakub@acgov.org.

Sincerely,

Barbara J. Jakub, P.G.
Hazardous Materials Specialist

Enclosures: ACEH Electronic Report Upload (ftp) Instructions

cc: David DeMent, ERS, 1600 Riviera Avenue, Suite 310, Walnut Creek, CA 94596
Donna Drogos, ACEH
Barbara Jakub, ACEH
File

October 20, 2009

Mr. George Lockwood
State Water Resources Control Board
Division of Water Quality
P.O. Box 2231
Sacramento, California 95812

Re: Response to ACEH Comment Letter Dated September 10, 2009
1700 Jefferson Street, Oakland, California
ACEH Case RO# 151, RWQCB Case 01-0210

Dear Mr. Lockwood:

On behalf of Mr. David Blain and BPS Reprographic Services, responsible party for the Underground Storage Tank (UST) Case at 1700 Jefferson Street, Oakland, California (Site), Environmental Risk Specialties Corporation (ERS) has prepared this response to Alameda County Environmental Health's (ACEH) September 10, 2009 comment letter denying regulatory closure. Please consider this response as an addendum to ERS's petition for review by the State Water Resources Control Board (SWRCB).

Comment 1 – "The request for regulatory case closure appears to be based on ERS' hypothesis that the hydrocarbon contamination is localized around the original source area and that the high concentration of TPHg and benzene in MW-5 is due to an unknown offsite source."

According to HLA's November 3, 1987 *Groundwater Investigation Report*, monitoring wells MW-1 through MW-3 were initially monitored and sampled on June 24, 1987. HLA reported 30 inches of free product in well MW-1 and a corrected groundwater elevation of 5.69 feet. Using groundwater elevations of 5.90 feet in well MW-2 and 6.27 feet in well MW-3, the calculated groundwater flow direction and gradient was reported as north-northeast at 0.011 foot per foot. In its November 28, 1988 *Off-Site Hydrogeologic Investigation*, HLA reported that "A reliable estimate of the ground-water flow direction and magnitude of gradient could not be calculated using the data collected on September 9, 1988 because free product was present in four of the five monitoring wells" and "On the basis of ground-water elevation data collected in the past, the flow direction is believed to be towards the north to northwest." Unless there are missing records, it appears that the initial finding that groundwater flow direction was to the north to northwest was based on <u>one</u> groundwater monitoring event in which one of the three monitoring wells contained 30 inches of free product. HLA admitted that reliable groundwater flow directions are difficult or impossible to

calculate when free product is present and the gradient is relatively flat. ERS concurs with this opinion.
Free product was observed in the onsite wells from 1987 to 1994 and groundwater extraction was performed from June 1992 to July 1999; therefore, ERS contends that the groundwater flow directions calculated during this time (ranging from south to west to east) should be considered suspect. During the last six to nine months of groundwater extraction when extraction rates were significantly lower and free product was no longer being observed in any of the wells, calculated groundwater flow direction was generally northwest. From December 1998 to September 2009, groundwater flow direction was north to northeast one (**1)** time and west to northwest twenty-six (**26)** times.

In ERS's September 17, 2009 Groundwater monitoring report, BTEX ratios as a percentage of the total reported TPHg were compared for the March and September 2009 well monitoring and sampling events. Ratios are summarized in the table below.

BTEX RATIOS AS A PERCENTAGE OF TPHg

Well Number	Date Sampled	All BTEX	Benzene	Toluene	Ethyl-benzene	Total Xylenes
MW-1	03/03/09	42.8%	16.2%	16.2%	1.8%	8.4%
	09/03/09	40.8%	15.5%	14.4%	1.7%	9.1%
MW-3	03/03/09	2.1%	1.2%	0.3%	0.1%	0.4%
	09/03/09	13.9%	10.9%	0.2%	2.4%	0.3%
MW-5	03/03/09	43.2%	26.9%	8.2%	3.0%	5.0%
	09/03/09	39.5%	24.5%	3.4%	4.8%	6.7%

Please note that monitoring well MW-1 is located adjacent to the former USTs, well MW-5 is located approximately 160 feet north of the former USTs, and well WM-3 is approximately 21 feet crossgradient of the former USTs. Generally, BTEX ratios were consistent between the two respective sampling events in wells MW-1 and MW-5, but varied considerably in well MW-3. Ethylbenzene and xylenes ratios during the two events in wells MW-1, MW-3, and MW-5 demonstrated no distinct correlation. The ratio of combined total BTEX to the reported TPHg in wells MW-1 and MW-5 did show good correlation, and appear to indicate proximity to a source of impact. Since BTEX tends to preferentially attenuate with distance, total BTEX is expectedly much lower in well MW-3 than in either well MW-1 or well MW-5. If the BTEX being reported in well MW-5 originated from our former USTs, why is the total BTEX in well MW-5 so much higher than the total BTEX in well MW-3?

Since the predominant groundwater flow direction has been west-southwest to west-northwest for the last 12 years, two questions exist. Why are we seeing similar BTEX ratios in a monitoring well located less than 15 feet from our UST "source" and a second monitoring well over 160 feet north-

northeast from our UST "source?" Why are BTEX concentrations in monitoring well MW-5 so high and why are they this high after so many years?

Several lines of evidence suggest that petroleum hydrocarbon impacts reported in groundwater in well MW-5 originate from an unknown offsite source. Evidence for this offsite source of petroleum hydrocarbon impact includes: 1) despite elevated petroleum hydrocarbons being reported in groundwater in well MW-1 over time, almost no detectable petroleum hydrocarbons have been reported in groundwater in well MW-6, located approximately 100 feet in the confirmed downgradient direction during the same timeframe; 2) decreased concentrations of TPHg and BTEX in onsite well MW-1 and MW-3 are consistent with remedial activities performed at the Site while reported concentrations of TPHg and BTEX in offsite well MW-5 (located approximately 160 feet north of the former USTs) are more indicative of a "source" near the well; 3) from June 1996 to March 2009, the predominant groundwater flow direction is west to west-northwest and fluctuates almost exclusively from northwest to southwest; 4) groundwater plume definition work performed north of well MW-5 in March 1998 reported almost no petroleum hydrocarbon impacts in groundwater north of well MW-5, which is consistent with the westerly calculated groundwater flow direction; and 5) a characteristic concrete repair exists in the sidewalk adjacent to well MW-5 that looks like a UST was removed.

Comment 2 – "A review of the site history indicates that the hypothesis that MW-5 is impacted by an off-site source is not substantiated."

In addition to the reasons cited above, additional data exists that demonstrates the low potential that petroleum hydrocarbons reported in well MW-5 originated from the Site: 1) the calculated gradient is typically relatively flat at 0.001 to 0.005 foot per foot; 2) free product appears to have "pooled" around the former USTs and did not spread horizontally to any great degree, as free product thickness measured in well MW-3 never exceeded 4.1 inches; 3) free product removal was initiated in 1987 and groundwater extraction was performed from June 1992 to July 1999 out of onsite groundwater extraction wells; and 4) HLA's aquifer test data conducted in Site wells estimated a sustained well yield of only 0.25 gallons per minute.

In ERS's March 19, 2009 *Groundwater Monitoring Report*, ERS recommended conducting a subsurface investigation to "attempt to identify a potential offsite source that is impacting groundwater in the vicinity of well MW-5." ACEH did not comment on this recommendation.

Comment 3 – Does "consideration of the vapor pathway" represent a data gap?

The potential exists for petroleum hydrocarbon migration in soil gas but the potential for an unacceptable human health risk is low. Residual petroleum hydrocarbons in soil exist primarily in the parking lot of the facility, the basement of the adjacent building is approximately 35 feet crossgradient, and groundwater is primarily encountered at 22 to 28 feet bgs.

As is necessary to fully justify full regulatory closure, soil gas samples can be collected in meaningful, representative locations to assess residual BTEX concentrations in soil gas and further assess the subsurface migration potential.

Comment 4 – Does "evaluation of potential risk to adjacent apartments and buildings identified as having basement and a sunken courtyard" represent a data gap?

Of interesting note is that this concern for potential vapor intrusion into buildings was never expressed in correspondence until the request for closure was made. In its February 13, 2004 comment letter, ACEH was still commenting on issues such as "undefined plume" and "migration control required" (well MW-5) despite six years of a northwest to southwest groundwater flow direction. HLA performed a subsurface investigation in February 1998 that demonstrated little or no TPH impacts in groundwater north of well MW-5 (CPT-3 through CPT-6) and south of the USTs in 17th Street (CPT-1 and CPT-2).

Comment 5 – Is additional "Delineation of Contamination in Source Area" warranted?

Previous subsurface investigation has demonstrated that residual petroleum hydrocarbon impacts in subsurface soil and groundwater are significantly weathered. BTEX has decreased almost below laboratory reporting limits in all three groundwater monitoring wells. Based on the likely age of the release (pre-1990), fine grain soils present at the Site to an approximate depth of 15 feet bgs, significantly weathered residual petroleum hydrocarbons in previously obtained soil and groundwater samples, an almost total lack of BTEX in groundwater, and limited migration potential in groundwater, the estimated human health risk is minimal.

Of interesting note is that the request for additional soil characterization at the former USTs is made only after a request for closure is made.

Comment 6 – Is additional "Dissolved Plume Definition" warranted?

ERS contends that periodic monitoring well data at the plume boundary is not always necessary to conclusively demonstrate plume stability. In this instance, there are no monitoring wells at the plume boundary to document decreasing TPH concentrations. There are groundwater monitoring wells located adjacent to the primary sources of impact that document significantly decreasing TPHg and BTEX concentrations over time and that natural attenuation processes are active at the Site. Generally, groundwater characterization obtained to date demonstrates that the plume of petroleum hydrocarbon impacted groundwater is relatively small and can be expected to attenuate with distance in the same manner that petroleum hydrocarbon impacts in groundwater are attenuating adjacent to the original source(s).

Comment 7 – Is a "Well Survey" warranted?

HLA previously submitted a well survey that showed the closest downgradient wells are located at the intersection of Martin Luther King Jr. Way and 14th Street, approximately 1,000 feet southwest of the Site. A second well survey can be performed if necessary.

Comment 8 – Is a "Site Conceptual Model" warranted?

Based on ACEH's previous regulatory oversight, an updated comprehensive Site Conceptual Model (SCM) may aid in understanding site conditions. However, based on the comments to ERS's June 3, 2009 Request for Regulatory Closure, ERS believes an updated SCM would only result in ACEH requesting yet more site characterization and more data displays and/or manipulation.

Comment 9 – Are additional "Data Tables" and "rose diagrams" warranted?

In November 2003, MACTEC prepared rose diagrams that illustrated the summary tables of historical groundwater flow directions and gradients. The vast majority of calculated groundwater flow directions (including some erroneous values) ranged from southwest to northwest (230 to 330 degrees) and the predominant flow direction was west-northwest (290 degrees).

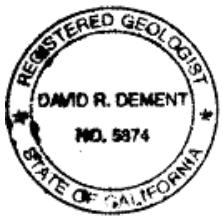
General Comments

Based on historical directives and recently passed resolutions, the SWRCB has indicated that regulatory oversight should be based on site-specific data and conditions. Generally, ACEH's comments seem more of a "cook book" approach than site-specific regulatory oversight. Performing unnecessary and/or redundant investigation is costly and simply confirming unlikely "negatives" is rarely worth the expense. ERS contends that ACEH is requesting excessive site characterization and unnecessary data manipulation.

The geology, and the investigation work performed to date at 1700 Jefferson Street have demonstrated a very typical release scenario for this general area. We should be able to rely on our experiences with other similar sites, and make some decisions accordingly. Most of the additional site characterization ACEH requested in its September 10, 2009 letter is not necessary to evaluate this Site for commercial closure. ERS believes we have presented some compelling evidence for an offsite source and some debate is in order.

If you have any questions, please contact me at (925) 938-1600 extension 109 or via email at ddement@erscorp.us.

Sincerely,



David DeMent, PG
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cc: Mr. David Blain, BPS Reprographic Services
Ms. Barbara Jakub, ACEH