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**ENVIRONMENTAL RESOLUTIONS, INC.**

February 18, 1999  
ERI 200903.W01

# 1068

Mr. Barney Chan  
Alameda County Health Care Services Agency  
Department of Environmental Health  
1131 Harbor Bay Parkway, Room 250  
Alameda, California 94502-6577

Subject: Work Plan for Utility Survey, Sensitive Receptor Survey, and Baseline Risk Assessment for Case Closure at Former Exxon Service Station 7-0236, 6600 East 14<sup>th</sup> Street, Oakland, California.

Mr. Chan:

At the request of Exxon Company, U.S.A. (Exxon), and in response to Alameda County Health Care Services Agency's (the County) letter of January 7, 1999 (Attachment A), Environmental Resolutions, Inc. (ERI) is submitting this Work Plan. The Work Plan includes a utility survey, sensitive receptor survey, and baseline risk assessment for residual concentrations of methyl tertiary butyl ether (MTBE) in groundwater beneath the subject site.

## **BACKGROUND**

### **Site Description**

The site is located on the northeastern side of East 14<sup>th</sup> Street between Havenscourt Boulevard and 66<sup>th</sup> Avenue in Oakland, California at an elevation of approximately 20 feet above mean sea level, as shown on the Site Vicinity Map (Plate 1). The location of former site facilities including the service station building, dispenser islands, and underground storage tanks (USTs) are shown on the Generalized Site Plan (Plate 2). The area surrounding the site is occupied by residential and small businesses.

### **Previous Work**

Environmental field activities began in March 1991, with the installation of three groundwater monitoring wells. Subsequent to the initial field investigation, four additional groundwater monitoring wells were installed in March 1992, and three soil vapor extraction wells were installed in November 1993. Exxon initiated quarterly groundwater monitoring and sampling at the site in January 1992.

A vapor extraction test and step draw down test was performed at the site in December 1993. Exxon's environmental consultant concluded that vapor-extraction and groundwater pump and treat technologies were not feasible remedial alternatives for the site and bioattenuation was a favorable remedial alternative for the site.

In February 1996, Exxon submitted a Corrective Action Plan (CAP) for the subject site. The CAP included recommendations for passive bioremediation as the remedial alternative for the site. This recommendation was based on fate and transport analysis of soil and groundwater conditions and hydrocarbon concentrations, subsurface lithology, and a letter dated March 7, 1994, from the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Board), which agreed with earlier findings on remedial alternatives.

In December 1996, Exxon demolished the existing station and removed three fuel USTs, one 550-gallon used-oil UST, associated product lines and dispensers, and two hoists. Results of soil sampling indicated residual petroleum hydrocarbons as diesel and gasoline were present beneath two dispensers.

In January 1997, ERI installed groundwater monitoring well MW8 towards the eastern property boundary of the subject site. ERI also properly destroyed MW1 and MW7, located at 6630 East 14<sup>th</sup> Street and vapor extraction wells VE1 through VE3 located at the subject site.

In December 1997 and April 1998 ERI performed over excavation activities of hydrocarbon impacted soil at the subject site and portions of the adjacent property located at 6630 East 14<sup>th</sup> Street. Approximately 348 tons of soil were removed during over excavation activities.

**Groundwater Monitoring and Sampling**

First quarter 1999 groundwater monitoring and sampling data are shown in Table 1. Concentrations of petroleum hydrocarbons in groundwater have decreased since 1991.

**WORK PLAN SCOPE**

ERI will perform the following scope of work:

**Task 1: Utility Survey/Sensitive Receptor Survey /Groundwater and Soil Sampling**

ERI will assess underground utilities in the vicinity of the subject site. ERI will perform a Sensitive Receptor Survey (SRS) to locate private water wells, surface water bodies, and basements in the vicinity of the subject site. In addition, samples will be collected from on-site groundwater monitoring wells for the evaluation of bio-remediation parameters including oxidation-reduction potential, nitrate, sulfate, ferrous iron, and alkalinity. Additional on-site soil samples may be necessary for the evaluation of bio-remediation parameters. If soil samples are necessary, ERI will prepare and submit a work plan to the County to place approximately two shallow, hand-auger borings at the subject site. These borings, if necessary, are not intended for delineation purposes.

*bioremed.  
is not  
effective on  
MTBE*

*(looking for groundw samples offsite*

**Task 2: Baseline Risk Assessment**

ERI will review and interpret existing hydrogeologic parameters and chemical data and input data collected into Risk Based Corrective Action (RBCA).

ERI will utilize RBCA Tier 1 fate and transport modeling program. The program will evaluate the potential impacts of dissolved hydrocarbons within the water-bearing zone and the extent of impact, if any, to local receptors. The program will also evaluate the migration of hydrocarbon impacted

groundwater and calculate time and distance water quality objectives will be met. A report will be prepared detailing the results of the investigation.

### OFF-SITE SOIL BORINGS

ERI does not recommend the installation of off-site soil borings at this time. Sufficient data are available for the evaluation of the extent of hydrocarbons in soil and groundwater beneath and adjacent to the subject site. Exxon has removed the source of hydrocarbons in soil beneath the subject site through the removal of USTs and over excavation of hydrocarbon impacted soil.

Furthermore, the concentrations of MTBE and benzene in groundwater samples collected from MW2 have decreased over the past several years. The concentration of MTBE in MW2 has decreased from 36,000 micrograms per liter (ug/L) in August 1995, to 2,200 ug/L in January 1999. The concentration of benzene in MW2 has decreased from 740 ug/L in March 1992 to less than 5 ug/L in January 1999. Additionally, neither MTBE nor benzene has been consistently detected in the down gradient groundwater monitoring well (MW5) since it was installed in April 1992.

ERI recommends proposing case closure and/or other appropriate actions based on the results of the utility survey, SRS and RBCA reports. ERI anticipates the scope of activities proposed in this Work Plan can be completed within 60 days of receiving written approval from the County.

Please call me with any questions at 415-382-5991.



Sincerely,  
Environmental Resolutions, Inc.

*Steve M. Zigan*  
Mark S. Dockum, R.G., C.E.G.  
Senior Project Manager

cc: Ms. Marla D. Guensler - Exxon Company, U.S. A.  
Mr. Stephen Hill - California Regional Water Quality Control Board, San Francisco Bay Region

Table 1: Groundwater Monitoring Data

Plate 1: Site Vicinity Map  
Plate 2: Generalized Site Plan

Attachment A: Alameda County Health Care Services Agency Letter Dated January 7, 1999.

TABLE 1  
 CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA  
 Former Exxon Service Station 7-0236  
 6600 East 14th Street  
 Oakland, California  
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Well ID # (TOC)	Sampling Date	SUBJ < ... >	DTW feet..... >	Elev .....>	TEPHId < .....	TPPHg ..... ug/L...	MTBE .....	B .....	T .....	E .....	X .....>	DO < ppm.. >
MW1 (20.20)	3/15/91	NR	7.44	12.76	---	<50	---	<0.3	0.5	0.3	1.3	---
	01/15/92 (H,T)	NR	10.60	9.60	<300	<50	---	<0.5	0.7	<0.5	0.9	---
	03/23/92 (H,T)	NR	6.38	13.82	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	4/6/92	NR	7.55	12.65	---	---	---	---	---	---	---	---
	07/08/92 (H,T)	NR	9.85	10.35	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	10/13/92 (H,T)	NR	12.95	7.25	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	3/9/93	NLPH	7.38	12.82	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	6/4/93	NLPH	8.55	11.65	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	9/2/93	NLPH	10.85	9.35	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	11/16/93	NLPH	12.43	7.77	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	2/4/94	NLPH	9.10	11.10	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	4/29/94	NLPH	8.45	11.75	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	9/20/94	NLPH	10.73	9.47	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	12/14/94	NLPH	7.35	12.85	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	3/27/95	NLPH	7.06	13.14	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	5/18/95	NLPH	7.32	12.88	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	8/8/95	NLPH	9.24	10.96	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	11/7/95	NLPH	10.74	9.46	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	2/29/96	NLPH	6.80	13.40	53	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	5/10/96	NLPH	8.13	12.07	150	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	8/20/96	NLPH	9.58	10.62	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	10/17/96	---	---	---	---	---	---	---	---	---	---	9.50
	11/27/96	---	---	---	---	---	---	---	---	---	---	11.54
	12/6/96	NLPH	8.10	12.10	---	---	---	---	---	---	---	10.05
	1/19/97	abandoned										
MW2 (19.15)	03/15/91 (H,T)	NR	9.05	10.10	120	1,700	---	190	2.6	12	64	---
	01/15/92 (H,T)	NR	11.60	7.55	1,000	6,800	---	81	<10	320	170	---
	03/23/92 (H,T)	NR	9.42	9.73	3,000	7,100	---	740	30	810	490	---
	4/6/92	NR	9.09	10.06	---	---	---	---	---	---	---	---
	7/8/92	NR	10.08	9.07	2,100	7,000	---	250	14	300	160	---
	10/13/92	NR	12.06	7.09	1,900	3,200	---	97	2.6	97	53	---
	3/9/93	sheen	9.71	9.44	---	---	---	---	---	---	---	---
	6/4/93	sheen	9.40	9.75	---	---	---	---	---	---	---	---
	09/02/93	sheen	10.46	8.69	3,700	11,000	2,500	210	18	260	59	---
	11/16/93 (M*)	NLPH	11.44	7.71	3,300	8,500	---	75	27	51	32	---
	2/4/94	NLPH	10.41	8.74	2,700	4,400	---	120	16	22	7.7	---
	4/29/94	NLPH	9.51	9.64	2,000	380	---	5.9	0.6	1.6	<0.5	---

TABLE I  
 CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA  
 Former Exxon Service Station 7-0236  
 6600 East 14th Street  
 Oakland, California  
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Well ID # (TOC)	Sampling Date	SUBJ < .....	DTW .feet. .... >	Elev. ..... >	TEPHd < .....	TPPHg ..... >	MTBE ..... >	B ..... >	T ..... >	E ..... >	X ..... >	DO <...ppm...>	
MW2 (cont.) (19 15)	9/20/94	NLPH	10 57	8 58	1,800**	19,000	---	190	29***	110	27***	---	
	12/14/94	sheen	8.90	10 25	---	---	---	---	---	---	---	---	
	09/20/94	NLPH	10 57	8 58	1,800**	19,000	---	190	29***	110	27***	---	
	12/14/94	sheen	8 90	10 25	---	---	---	---	---	---	---	---	
	3/27/95	NLPH	7 72	11 43	1,700	6,300	---	210	15	250	43	---	
	5/18/95	sheen	8 65	10 50	2,000#	6,000	---	180	9.9	220	55	---	
	8/8/95	NLPH	9.67	9.48	2,700	5,300	36,000	110	<20	120	<20	---	
	11/7/95	NLPH	10 49	8.66	1,800	6,400	24,000	120	11	95	38	---	
	Additional Analyses for general minerals and properties < *												
		2/29/96	NLPH	8.45	10.70	2,500	<5,000	25,000	120	<50	120	<50	---
		5/10/96	NLPH	9 02	10.13	2,300	11,000	26,000	210	120	210	140	---
		8/20/96	NLPH	10 08	9 07	---	---	---	---	---	---	---	---
		10/17/96	---	---	---	---	---	---	---	---	---	---	7 75
		11/27/96	---	---	---	---	---	---	---	---	---	---	6.28
		12/6/96	NLPH	10.21	8 94	1,700	5,800	<125	170	<25	38	<25	5.21
	1/17/97	NLPH	---	---	---	---	---	---	---	---	---	3 67	
(22.19)	2/25/97	NLPH	8.15	14 04	1,500	5,900	4,400	110	14	310	52	2.71	
	3/13/97	---	---	---	---	---	---	---	---	---	---	2 46	
	4/16/97	---	---	---	---	---	---	---	---	---	---	1 00	
	5/21/97	NLPH	10.50	11.69	1,600	5,700	1,800	71	11	240	59	0 85	
	6/5/97	---	---	---	---	---	---	---	---	---	---	2.18	
	7/11/97	---	---	---	---	---	---	---	---	---	---	1.87	
	8/6/97	NLPH	10.80	11 39	1,600	4,100	(1,900)	40	5 2	49	17	1 51	
	9/23/97	---	---	---	---	---	---	---	---	---	---	2 36	
	10/7/97	NLPH	11.08	11.11	1,200	280	230	1 2	2 4	<0 5	1 1	1 56	
	12/24/97	---	---	---	---	---	---	---	---	---	---	1 23	
	1/16/98	NLPH	7.29	14 90	1,200	3,500	3,000	190	14	110	31	1 18	
	2/20/98	---	---	---	---	---	---	---	---	---	---	1 30	
	3/26/98	---	---	---	---	---	---	---	---	---	---	1 20	
	4/17/98	NLPH	8 61	13.58	970	3,200	2,600	150	6 9	37	5 7	1 38	
	5/13/98	---	---	---	---	---	---	---	---	---	---	0 45	
6/22/98	---	---	---	---	---	---	---	---	---	---	1 09		
7/17/98	NLPH	9.38	12 81	1,300	1,700	1,500	63	<5 0	<5 0	<5 0	0 86		
10/16/98	NLPH	10 41	11.78	1,500	2,000	1,400	22	<2.0	<2.0	2 4	---		
1/15/99	NLPH	10.01	12.18	900	2,300	2,200	<5.0	6.0	<5.0	6.5	---		
						method ?							
MW3 (19 59)	03/15/91 (H,T)	NR	7 84	11.75	160	3,100	---	2 2	1 9	100	84	---	
	01/15/92 (H,T)	NR	10.30	9.29	<300	250	---	0 7	6.8	1.5	1 5	---	
	03/23/92 (H,T)	NR	6 84	12.75	440	640	---	<0 5	12	25	6.5	---	



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 6600 East 14th Street  
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Well ID # (TOC)	Sampling Date	SUBJ < ... ..feet... .. >	DTW	Elev.	TEPHd <..... .. >	TPPHg ..... .. ug/L .....	MTBE	B ..... .. ug/L .....	T ..... .. ug/L .....	E ..... .. ug/L .....	X ..... .. ug/L .....	DO <...ppm >
MW3 (cont ) (22 62)	6/22/98	---	---	---	---	---	---	---	---	---	---	0.96
	7/17/98	NLPH	8.23	14.39	180	450	8.9	9.5	<1.0	<1.0	<1.0	0.94
	10/16/98	NLPH	9.75	12.87	320	520	5.1	<0.5	11	<0.5	0.93	---
	1/15/99	NLPH	8.83	13.79	190	600	12	<0.5	0.91	<0.5	0.70	---
MW4 (19 46)	4/6/92	NR	7.76	11.70	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	7/8/92	NR	9.56	9.90	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	10/13/92	NR	12.09	7.37	<80	<50	---	<0.5	<0.5	<0.5	<0.5	---
	3/9/93	NLPH	7.53	11.93	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	6/4/93	NLPH	8.50	10.96	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	9/2/93	NLPH	10.30	9.16	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	11/16/93*	---	---	---	---	---	---	---	---	---	---	---
	2/4/94	NLPH	8.82	10.64	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	04/29/94(D)	NLPH	8.55	10.91	100	<50	---	<0.5	<0.5	<0.5	<0.5	---
	9/20/94	NLPH	10.21	9.25	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	12/14/94	NLPH	7.04	12.42	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	3/27/95	NLPH	6.38	13.08	140	<50	---	<0.5	<0.5	<0.5	<0.5	---
	5/18/95	NLPH	7.56	11.90	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	8/8/95	NLPH	8.92	10.54	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	11/7/95	NLPH	10.30	9.16	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	2/29/96	NLPH	6.44	13.02	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	5/10/96	NLPH	8.15	11.31	<50	<50	<2.5	<0.5	0.84	<0.5	2.3	---
	8/20/96	NLPH	9.27	10.19	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	10/17/96	---	---	---	---	---	---	---	---	---	---	1.63
	11/27/96	---	---	---	---	---	---	---	---	---	---	1.54
	12/6/96	NLPH	7.76	11.70	---	---	---	---	---	---	---	2.33
	1/17/97	---	---	---	---	---	---	---	---	---	---	0.91
(22 58)	2/25/97	NLPH	7.98	14.60	<50	<50	<2.5	0.60	0.89	<0.5	1.8	1.03
	3/13/97	---	---	---	---	---	---	---	---	---	---	1.06
	4/16/97	---	---	---	---	---	---	---	---	---	---	4.03
	5/21/97	NLPH	9.03	13.55	---	---	---	---	---	---	---	0.90
	6/5/97	---	---	---	---	---	---	---	---	---	---	1.46
	7/11/97	---	---	---	---	---	---	---	---	---	---	1.31
	8/6/97	NLPH	9.74	12.84	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	1.46
	9/23/97	---	---	---	---	---	---	---	---	---	---	1.50
	10/7/97	NLPH	10.06	12.52	---	---	---	---	---	---	---	1.65
	12/24/97	---	---	---	---	---	---	---	---	---	---	1.96
	1/16/98	NLPH	5.01	17.57	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	1.68





TABLE 1  
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 Former Exxon Service Station 7-0236  
 6600 East 14th Street  
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Well ID # (TOC)	Sampling Date	SUBJ <...>	DTW .feet.....>	Elev. >	TEPHd <...>	TPPHg <...>	MTBE <...>	B ug/L	T <...>	E <...>	X <...>	DO <...ppm>
MW5 (cont.)	7/11/97	---	---	---	---	---	---	---	---	---	---	---
(19 98)	8/6/97	NLPH	11.78	8.20	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	9/23/97	---	---	---	---	---	---	---	---	---	---	---
	10/7/97	NLPH	12.26	7.72	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	12/24/97	---	---	---	---	---	---	---	---	---	---	---
	1/16/98	NLPH	8.87	11.11	<50	<50	<2.5	<0.5	<0.5	<0.5	0.64	---
	2/20/98	---	---	---	---	---	---	---	---	---	---	---
(19.98)	3/26/98	---	---	---	---	---	---	---	---	---	---	---
	4/17/98	NLPH	9.97	10.01	<50	<50	<2.5	0.90	2.2	0.81	3.6	---
	5/13/98	---	---	---	---	---	---	---	---	---	---	---
	6/22/98	---	---	---	---	---	---	---	---	---	---	---
	7/17/98	NLPH	11.00	8.98	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	10/16/98	NLPH	11.92	8.06	51	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	1/15/99	NLPH	9.01	10.97	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
MW6	01/06/92(11)	NR	8.29	10.50	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
(18 79)	07/08/92(11,T)	NR	9.22	9.57	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	10/13/92	NR	11.51	7.28	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	3/9/93	NLPH	8.26	10.53	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	6/4/93	NLPH	8.90	9.89	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	9/2/93	NLPH	9.92	8.87	60	<50	---	<0.5	<0.5	<0.5	<0.5	---
	11/16/93	NLPH	10.65	8.14	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	2/4/94	NLPH	9.26	9.53	80	<50	---	<0.5	<0.5	<0.5	<0.5	---
	4/29/94	NLPH	8.33	10.46	110	<50	---	<0.5	<0.5	<0.5	<0.5	---
	9/20/94	NLPH	9.23	9.56	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	12/14/94	sheen	7.87	10.92	---	---	---	---	---	---	---	---
	3/27/95	NLPH	7.63	11.16	54	56	---	<0.5	<0.5	<0.5	<0.5	---
	5/18/95	NLPH	8.00	10.79	71	56	---	<0.5	<0.5	<0.5	<0.5	---
	8/8/95	NLPH	8.92	9.87	60	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	11/7/95	NLPH	9.77	9.02	<50	<50	4.7	<0.5	<0.5	<0.5	<0.5	---
	2/29/96	NLPH	7.67	11.12	64	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	5/10/96	NLPH	8.33	10.46	110	<50	5.4	<0.5	<0.5	<0.5	<0.5	---
	8/20/96	NLPH	9.16	9.63	---	---	---	---	---	---	---	---
(21 84)	10/17/96	---	---	---	---	---	---	---	---	---	---	10.58
	11/27/96	---	---	---	---	---	---	---	---	---	---	14.17
	12/6/96	NLPH	8.55	10.24	68	<50	3.9	<0.5	<0.5	<0.5	<0.5	10.33

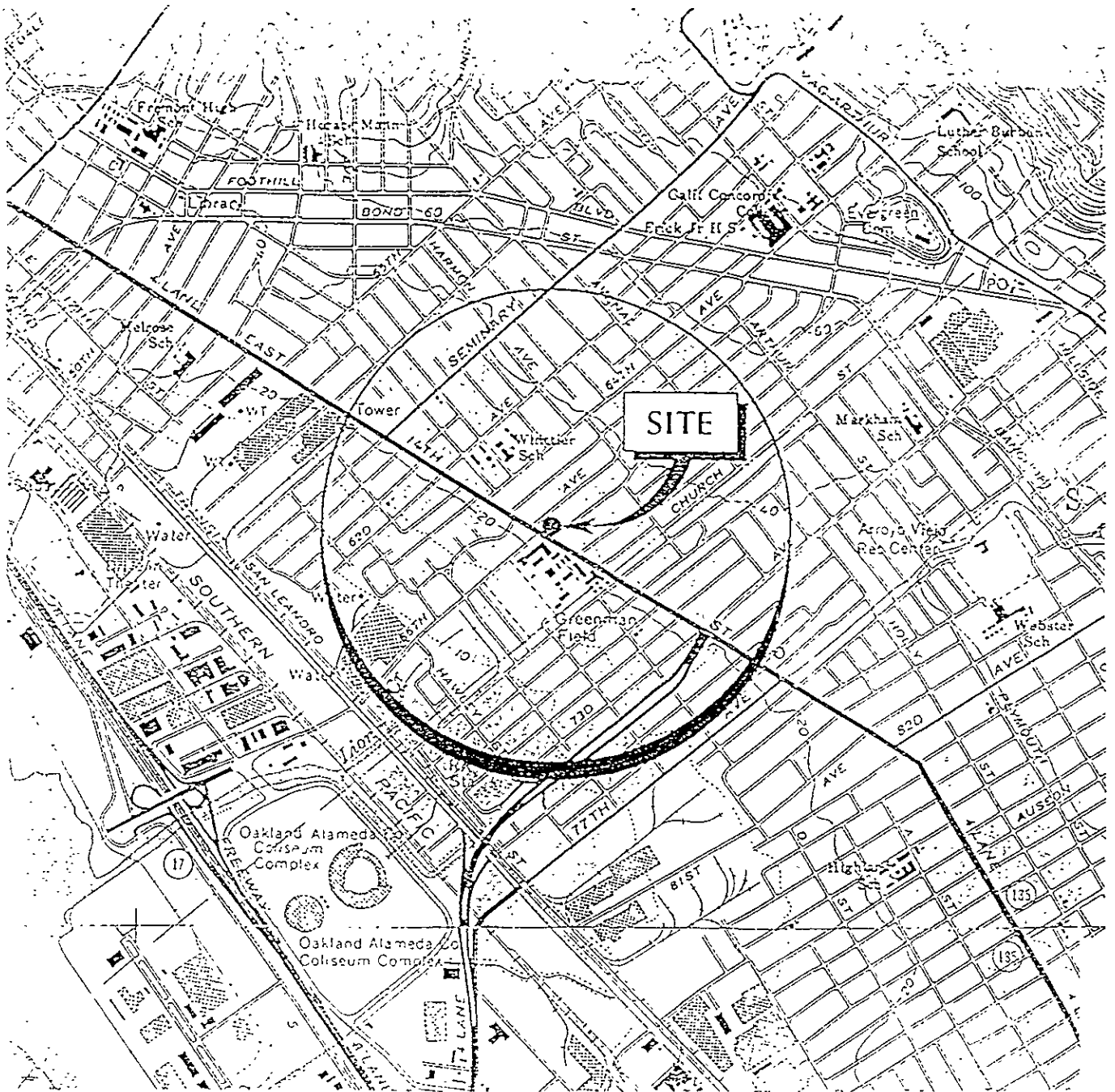
**TABLE 1**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-0236  
6600 East 14th Street  
Oakland, California  
(Page 7 of 9)

Well ID # (TOC)	Sampling Date	SUBJ	D/TW feet.	Elev.	TEPHd	TPPHg	MTBE	B ug/L	T	E	X	DO ppm
MW6 (cont.) (21 84)	1/17/97	---	---	---	---	---	---	---	---	---	---	11.71
	2/25/97	NLPH	8.42	13.42	67	<50	6.8	<0.5	<0.5	<0.5	<0.5	10.94
	3/13/97	---	---	---	---	---	---	---	---	---	---	8.88
	4/16/97	---	---	---	---	---	---	---	---	---	---	15.20
	5/21/97	NLPH	9.16	12.68	82	<50	3.4	<0.5	<0.5	<0.5	<0.5	12.38
	6/5/97	---	---	---	---	---	---	---	---	---	---	10.99
	7/11/97	---	---	---	---	---	---	---	---	---	---	10.13
	8/6/97	NLPH	9.82	12.02	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	9.05
	9/23/97	---	---	---	---	---	---	---	---	---	---	6.22
	10/7/97	NLPH	9.85	11.99	89	<50	4.1	<0.5	<0.5	<0.5	<0.5	9.68
	12/24/97	---	---	---	---	---	---	---	---	---	---	2.78
	1/16/98	NLPH	5.50	16.34	93	<50	<2.5	<0.5	<0.5	<0.5	<0.5	2.73
	2/20/98	---	---	---	---	---	---	---	---	---	---	3.55
	3/26/98	---	---	---	---	---	---	---	---	---	---	3.90
	4/17/98	NLPH	8.12	13.72	59	<50	<2.5	<0.5	<0.5	<0.5	<0.5	5.08
	5/13/98	---	---	---	---	---	---	---	---	---	---	6.90
	6/22/98	---	---	---	---	---	---	---	---	---	---	8.96
	7/17/98	NLPH	8.81	13.03	63	<50	3.3	<0.5	<0.5	<0.5	<0.5	10.69
	10/16/98	NLPH	9.84	12.00	60	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	1/15/99	NLPH	9.55	12.29	<50	<50	3.7	<0.5	<0.5	<0.5	<0.5	---
MW7 (19 23)	4/6/92	NR	8.34	10.89	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	7/8/92	NR	10.30	8.93	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	10/13/92	NR	12.91	6.32	94	670	---	0.8	<0.5	<0.5	2.5	---
	03/09/93*	---	---	---	---	---	---	---	---	---	---	---
	6/4/93	NLPH	8.68	10.55	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	9/2/93	NLPH	10.80	8.43	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	11/16/93	NLPH	12.38	6.85	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	2/4/94	NLPH	9.28	9.95	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	4/29/94	NLPH	9.19	10.04	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	9/20/94	NLPH	10.85	8.38	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	12/14/94	NLPH	8.44	10.79	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	3/27/95	NLPH	7.54	11.69	280	<50	---	<0.5	<0.5	<0.5	<0.5	---
	5/18/95	NLPH	8.11	11.12	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---
	8/8/95	NLPH	9.48	9.75	52	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	11/17/95	NLPH	10.83	8.40	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	2/29/96	NLPH	7.70	11.53	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	5/10/96	NLPH	8.76	10.47	<50	<50	<2.5	<0.5	<0.5	<0.5	2.1	---
8/20/96	NLPH	9.91	9.32	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---	

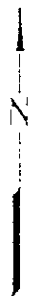
TABLE 1  
 CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA  
 Former Exxon Service Station 7-0236  
 6600 East 14th Street  
 Oakland, California  
 (Page 8 of 9)

Well ID # (FOC)	Sampling Date	SUBJ <.....feet.....>	DTW	Elev	TEPHd <.....>	TPPHg	MTBE	B .....ug/L.....	T	E	X	DO < ppm .>
MW7 (cont ) (19 23)	10/17/96	---	---	---	---	---	---	---	---	---	---	1.48
	11/27/96	---	---	---	---	---	---	---	---	---	---	2.71
	12/6/96	NLPH	8.90	10.33	---	---	---	---	---	---	---	8.90
	1/19/97	abandoned										
MW8 (22 60)	1/17/97	---	---	---	---	---	---	---	---	---	---	1.39
	2/25/97	NLPH	7.93	14.67	<50	69	30	<0.5	<0.5	<0.5	<0.5	1.82
	3/13/97	---	---	---	---	---	---	---	---	---	---	1.58
	4/16/97	---	---	---	---	---	---	---	---	---	---	0.81
	5/21/97	NLPH	9.04	13.56	<50	<50	3.5	<0.5	<0.5	<0.5	<0.5	0.74
	6/5/97	---	---	---	---	---	---	---	---	---	---	0.55
	7/11/97	---	---	---	---	---	---	---	---	---	---	0.85
	8/6/97	NLPH	9.90	12.70	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	0.77
	9/23/97	---	---	---	---	---	---	---	---	---	---	0.75
	10/7/97	NLPH	10.23	12.37	<50	100	4.9	1.1	<0.5	<0.5	<0.5	0.82
	12/24/97	---	---	---	---	---	---	---	---	---	---	0.86
	1/16/98	NLPH	4.39	18.21	81	180	9.6	2.8	<0.5	<0.5	0.92	0.94
	2/20/98	---	---	---	---	---	---	---	---	---	---	0.61
	3/26/98	---	---	---	---	---	---	---	---	---	---	0.53
	4/17/98	NLPH	---	---	74	370	27	<0.5	0.94	<0.5	0.79	2.65
	5/13/98	---	---	---	---	---	---	---	---	---	---	0.25
(22.60)	6/22/98	---	---	---	---	---	---	---	---	---	---	1.38
	7/17/98	NLPH	8.02	14.58	<50	<50	3.3	<0.5	<0.5	<0.5	<0.5	2.09
	10/16/98	NLPH	9.78	12.82	<50	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	1/15/99	NLPH	8.40	14.20	<50	<50	<2.5	<0.5	0.97	<0.5	<0.5	---

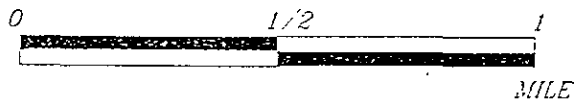




20090001



APPROXIMATE SCALE



Source: U.S.G.S 75 minute topographic quadrangle map Oakland East and San Leandro, Calif 1980

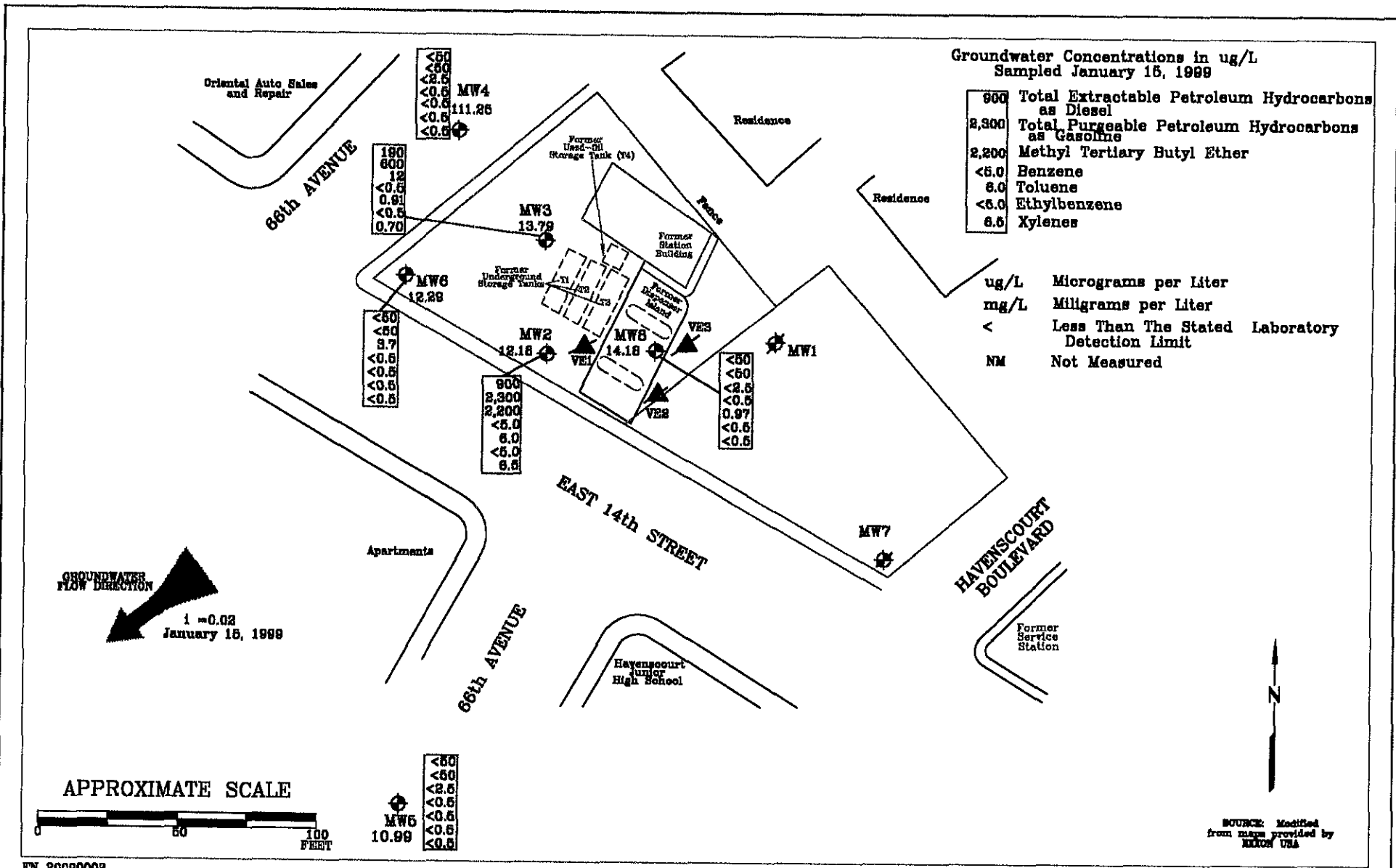


PROJECT ERI 2009

**SITE VICINITY MAP**  
 FORMER EXXON SERVICE STATION 7-0236  
 6600 East 14th Street  
 Oakland, California

PLATE

1



FN 20090002



**GENERALIZED SITE PLAN**  
 FORMER  
 EXXON SERVICE STATION 7-0236  
 6600 East 14th Street  
 Oakland, California

EXPLANATION	
◆ MW8	Groundwater Monitoring Well
◆ 14.18	Groundwater elevation in feet above mean sea level
◆ MW7	Groundwater Monitoring Well (Destroyed)
◆ VES	Vapor Extraction Well (Destroyed)
1 =	Interpreted Groundwater Gradient

<b>PROJECT NO.</b>	2009
<b>PLATE</b>	2
February 8, 1999	

**ATTACHMENT A**

ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY

DAVID J. KEARS, Agency Director



ENVIRONMENTAL HEALTH SERVICES

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

January 7, 1999  
StID # 1068

Ms. Marla Guensler  
Exxon Company, USA  
P.O. Box 4032  
Concord CA 94524-4032

Re: Request for Work Plan for Exxon RAS #7-0236, 6600 E. 14<sup>th</sup> St., Oakland CA 94621

Dear Ms. Guensler:

This letter follows up the November 19, 1998 meeting at our offices with Mr. Mark Dockum and Ms. Tracy Faulkner of Environmental Resolutions, Inc. (ERI). This meeting was meant to address my November 5, 1998 letter and provide guidance and recommendations for site closure.

The November 5<sup>th</sup> letter questioned the fluctuating dissolved oxygen concentrations reported in the well samples. It additionally requested that the additional bio-remediation parameters; oxidation-reduction potential, nitrate, sulfate, ferrous iron and alkalinity be run on the well samples. I suggest that this be done on monitoring wells MW3, MW2 and MW5 to establish the conditions up- and down-gradient and within the plume. You were also requested to consider adding oxygen releasing compound socks to MW-2, the most impacted well. Please perform these requested actions prior to your next groundwater sampling event.

The November 19<sup>th</sup> meeting was intended to discuss methods which would lead to site closure. The major obstacle was the elevated MTBE concentration found in MW-2. As you are aware, the Water Board has only provided guidance in handling MTBE cases, not policy. Because of the elevated MTBE concentration currently found in MW-2, the site must be adequately characterized and the concentration must be shown to be stable before site closure is to be considered. The Risk Management approach for the site requires the following:

- Adequate site characterization
- Removal of source
- Stable plume
- Examination of public health and ecological threat
- Institutional control

With this in mind, I requested the following: a well survey, a utility survey, a baseline risk assessment on the residual contaminants and a work plan for the advancement of off-site borings to determine the extent of MTBE plume. In a follow-up conversation with ERI, they could not confirm that you concurred with this approach, though it was my impression that you would.


This letter, therefore, requests the submission of a work plan to perform the above-mentioned items. Please submit this work plan within 30 days or by February 5, 1999.



Ms. Marla Guensler  
StID # 1068  
6600 E. 14<sup>th</sup> St., Oakland CA 94621  
January 7, 1999  
Page 2.

You may contact me at (510) 567-6765 if you have any questions.

Sincerely,



Barney M. Chan  
Hazardous Materials Specialist

C: B. Chan, files

Mr. M. Dockum, Environmental Resolutions, Inc., 74 Digital Drive, Suite 6, Novato,  
CA 94949

Wprq-6600E14