Weiss Associates Environmental and Geologic Services

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December 19, 1995

Scott O. Seery
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

RE: **Proposed Corrective Action Plan**
Shell Service Station
WIC #204-6852-1404
1784 150th Avenue
San Leandro, California
WA Job #81-0422

Dear Mr. Seery:

On behalf of Shell Oil Products Company, Weiss Associates (WA) has prepared this workplan as a response to the corrective action plan (CAP) request in your letter to Shell Environmental Engineer Dan Kirk, dated October 20, 1995. Your letter asked for a CAP that includes an evaluation of potential human health impacts through a risk-based corrective action (RBCA) analysis. After reviewing the site background, WA and Shell have concluded that additional site data are needed to properly perform a RBCA analysis. Specifically, WA proposes a soil vapor survey (SVS) to assess the potential flux of hydrocarbon vapors from ground water to ground surface. After performing the SVS, WA will submit a CAP that presents the results of the proposed RBCA analysis. A site background and description of our proposed scope of work and proposed schedule are presented below.

SITE BACKGROUND

Setting

Location: The site is an operating Shell service station located at the southern corner of 150th and Freedom Avenues in San Leandro, California (Figure 1).

Local Topography: The base of the San Leandro hills is approximately 0.25 miles to the northeast. The site is about 50 ft above mean sea level and the local topography slopes westward toward San Francisco Bay, about 6 miles to the west.

Surroundings: Mixed commercial and residential development.

Local Geology: Sediments beneath the site are Quaternary alluvial deposits derived from sedimentary and igneous rocks of the Diablo Range. The site is intersected by the Hayward Fault Zone.

Local Ground Water Use: Local drinking water is supplied by a utility, not ground water. An area well survey in 1992 identified 21 wells within one-half mile of the site. No wells were immediately downgradient of the site.

Previous Investigations

1986 Waste Oil Tank Removal: In November 1986, Petroleum Engineering of Santa Rosa, California, removed a 550-gallon waste oil tank from the site. Immediately following the tank removal, Blaine Tech Services (BTS) of San Jose, California collected soil samples beneath the former tank at 8 ft and 11 ft depth. The soil samples contained petroleum oil and grease (POG) at 196 and 167 parts per million (ppm), respectively. The tank pit was overexcavated to a total depth of 16 ft, but soil samples were not collected. Ground water was not encountered in the tank excavation[1]. A new 550-gallon fiberglass waste oil tank was installed in the same location.

1990 Well Installation: In March 1990, WA installed ground water monitoring well MW-1 (Figure 2) adjacent to the waste oil tank[2]. In a soil sample collected from 29 ft below ground surface (bgs), 35 ppm total petroleum hydrocarbons as gasoline (TPH-G) and 0.23 ppm benzene were detected.

1992 Well Installations: In February 1992, WA installed monitoring wells MW-2 and MW-3. A soil sample collected near the water table from the boring for well MW-2 contained 79 ppm TPH-G. Although well MW-3 is located over 100 ft upgradient of the tanks, up to 68 ppb TPH-G were detected in soil from this boring.

1994-5 Subsurface Investigation: In 1994 and 1995, WA drilled ten soil borings around the site (Figure 2). No hydrocarbons were detected in soil samples from any borings, except for 0.013 ppm benzene in boring BH-3 at 16 ft bgs. Also, no hydrocarbons were detected in ground water samples from borings BH-1, BH-4, BH-5 and BH-6. Ground water from borings BH-2 and BH-3 contained over 5,000 ppb TPH-G. Analytic results for soil and ground water collected from these borings are presented in Attachments A and B, respectively.

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1 BTS, November 21, 1986, Sampling Report 86315-M2, Shell Service Station, 1784 150th Avenue, San Leandro, California, Consultant's letter-report prepared for Shell Oil Company, 3 pages and 2 attachments.

2 Weiss Associates, July 31, 1990, Consultant's letter-report prepared for the Alameda County Department of Environmental Health (ACDEH) regarding second quarter 1990 activities at the Shell service station located at 1784 150th Avenue in San Leandro, California, 10 pages and 2 attachments.

1995 Well Installation: In March 1995, WA installed offsite well MW-4. The well is located west of the station because the analytic results from the water samples from the offsite borings indicated that hydrocarbons have migrated westward. No hydrocarbons were detected in soil or ground water from well MW-4.

Ground Water Monitoring: Ground water has been sampled quarterly since March 1990 Ground water samples from MW-2 have contained the highest TPH-G and benzene, up to 160,000 and 36,000 parts per billion (ppb), respectively. Although hydrocarbons have been detected in water from wells MW-1 and MW-3, no hydrocarbons have been detected in water from downgradient well MW-4. Ground water depths have ranged between 17 and 30 ft onsite and between 9 and 14 ft in offsite well MW-4. Water level measurements have not shown a consistent or reliable ground water flow direction. Considering the topographic gradient and the distribution of dissolved hydrocarbons, WA has presumed that the flow direction is westward. The ground water gradient is typically flat. Based on the ground water elevation contours from the September 1995 sampling, the gradient was about 0.00067 ft/ft. Analytic results for all quarterly ground water monitoring are presented in Attachment B.

PROPOSED SCOPE OF WORK

Soil Vapor Survey

The objective of the SVS is to collect soil vapor samples for assessing the potential migration of vapor-phase hydrocarbons from the water table to ground surface. These soil vapor data will facilitate evaluating if potential volatilization of dissolved hydrocarbons and migration of these hydrocarbons into indoor and outdoor air pose a significant human health risk. In addition to analyzing the vapor samples for benzene, toluene, ethylbenzene and xylenes (BTEX), the laboratory will analyze the samples for atmospheric gases, including oxygen, carbon dioxide and methane, to assess hydrocarbon degradation rates in the vadose zone.

To conduct the SVS, WA proposes to:

- Obtain a right-of-entry agreement with the owner of the property immediately southwest of the station;
- Secure an encroachment permit from the San Leandro Public Works Department and a drilling permit from the Zone 7 Water Agency for collecting samples beneath 150th Avenue;
- Locate all underground utility lines and prepare a site-specific health and safety plan;
- Collect 6 to 10 soil vapor samples from between 3 and 5 ft depth at the locations shown on Figure 2; and

- Analyze the soil vapor samples for BTEX, oxygen, carbon dioxide and methane.

RBCA Analysis

After the SVS is complete, WA will perform a RBCA analysis using the SVS and previously collected site data. The objective of the RBCA analysis is to assess the potential risk to human heath associated with the known petroleum hydrocarbons present in the subsurface, using the framework and guidance of the American Society for Testing and Materials (ASTM) RBCA process. This assessment is not intended to address potential impacts on ground water quality except as they relate to possible human health risk.

The ASTM RBCA framework is a tiered decision-making process whereby site contaminant levels, as determined during an initial site assessment, are compared to conservatively-derived risk-based screening level (RBSL) targets for contaminants in each environmental media. In the RBCA process, Tier 1 - *Site Classification and Non-Site-Specific-Screening Level Corrective Action Goals* - sites are classified by the urgency of need for initial corrective action, and then site-specific contaminant concentrations are compared to target Tier 1 RBSLs. The ASTM guidance provides example RBSL look-up tables intended as a guide for state and local enforcement agencies; the RBSLs in the look-up tables are not intended to be stand-alone cleanup standards. Site-specific contaminant concentrations below the RBSLs represent human health risks less than the target levels, and human health risk may reasonably be assumed to be insignificant if site-specific concentrations are below these target risk levels.

If the Tier 1 RBSLs are exceeded, the RBCA process provides several alternatives for subsequent action. These options include a Tier 2 application of Tier 1 RBSLs at an alternative point of exposure, a Tier 2 analysis including development of site-specific Tier 2 target levels (SSTLs), the provision of institutional or engineering mechanisms to limit or reduce exposures, or remediation to Tier 1 RBSLs. A Tier 3 evaluation is also available for large or complex sites involving more sophisticated fate and transport issues or extensive data acquisition and analysis. Similar to the Tier 1 RBSLs, the Tier 2 SSTLs represent contaminant concentrations, below which associated human health risks may reasonably be assumed to be insignificant.

Report Preparation

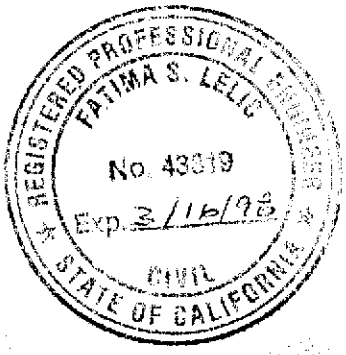
WA will prepare a CAP presenting the results for the SVS and RBCA analysis. The report will include a site map showing structures, paved surfaces, and soil vapor survey sampling locations; SVS analytic results; previous soil and ground water analytical results; a comparison of the former to Tier 1 RBCA RBSLs; recommendations based on the RBCA analysis; and laboratory analytic reports and chain-of-custody forms.

SCHEDULE

WA and Shell will proceed with obtaining the ROE after receiving written approval for this scope of work. After finalizing the ROE, WA and Shell will obtain the necessary permits and conduct the field work. WA anticipates completing the field work and receiving the analytic results about one month after obtaining the permits. Preparation of the CAP will require an additional two months.

WA trusts this workplan satisfies your request. Please call if you have any questions or comments.

Sincerely,
Weiss Associates



Thomas Fojut
Project Geologist

Fatima Lelic, PE, CIH
Principal Engineer

cc: R. Jeff Granberry, Shell Oil Products Company, PO Box 4023, Concord, California 94524
Kevin Graves, Regional Water Quality Control Board - San Francisco Bay, 2101 Webster Street, Suite 500, Oakland, California 94612

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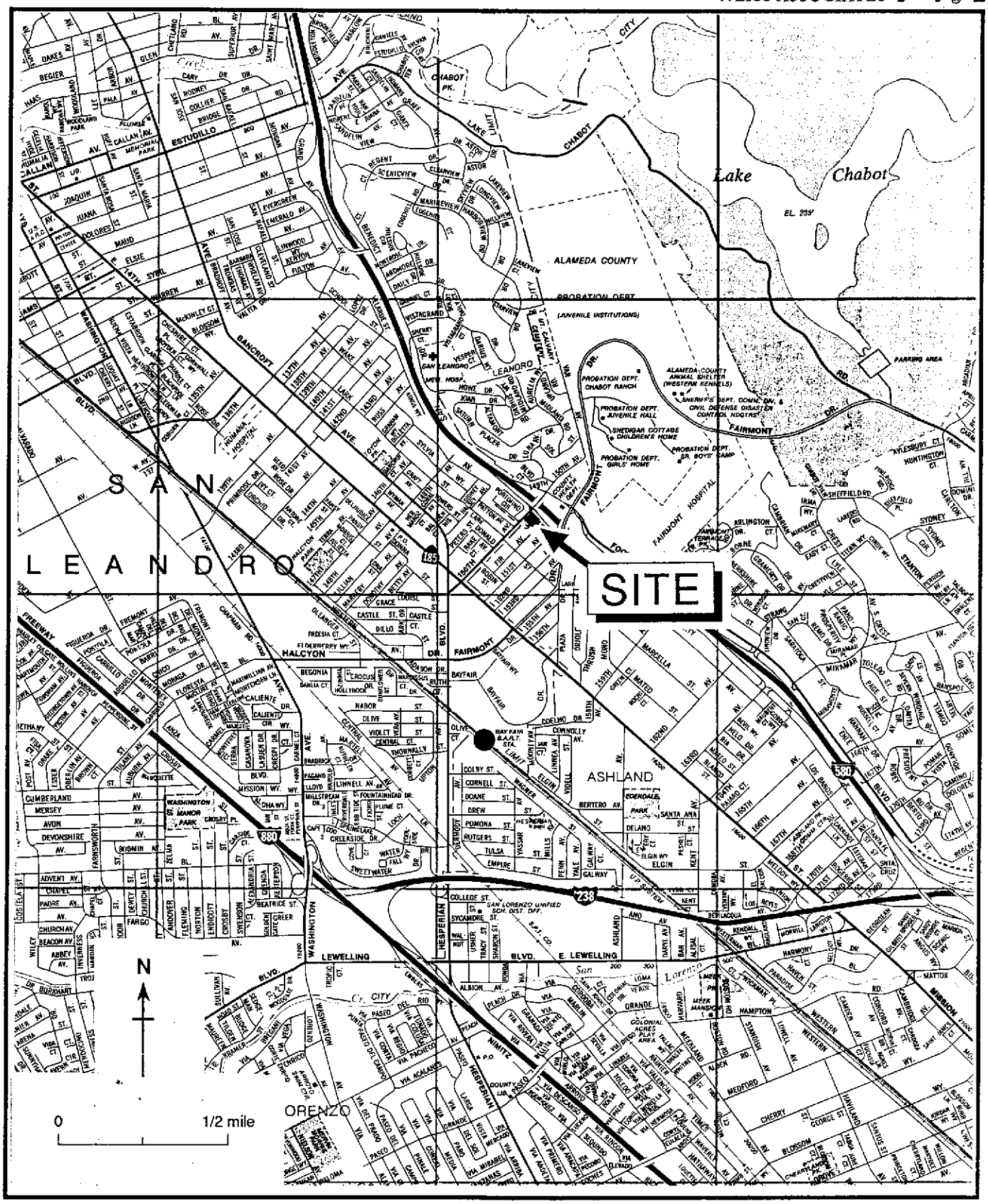

Figure 1. Site Location Map - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

3/16/90

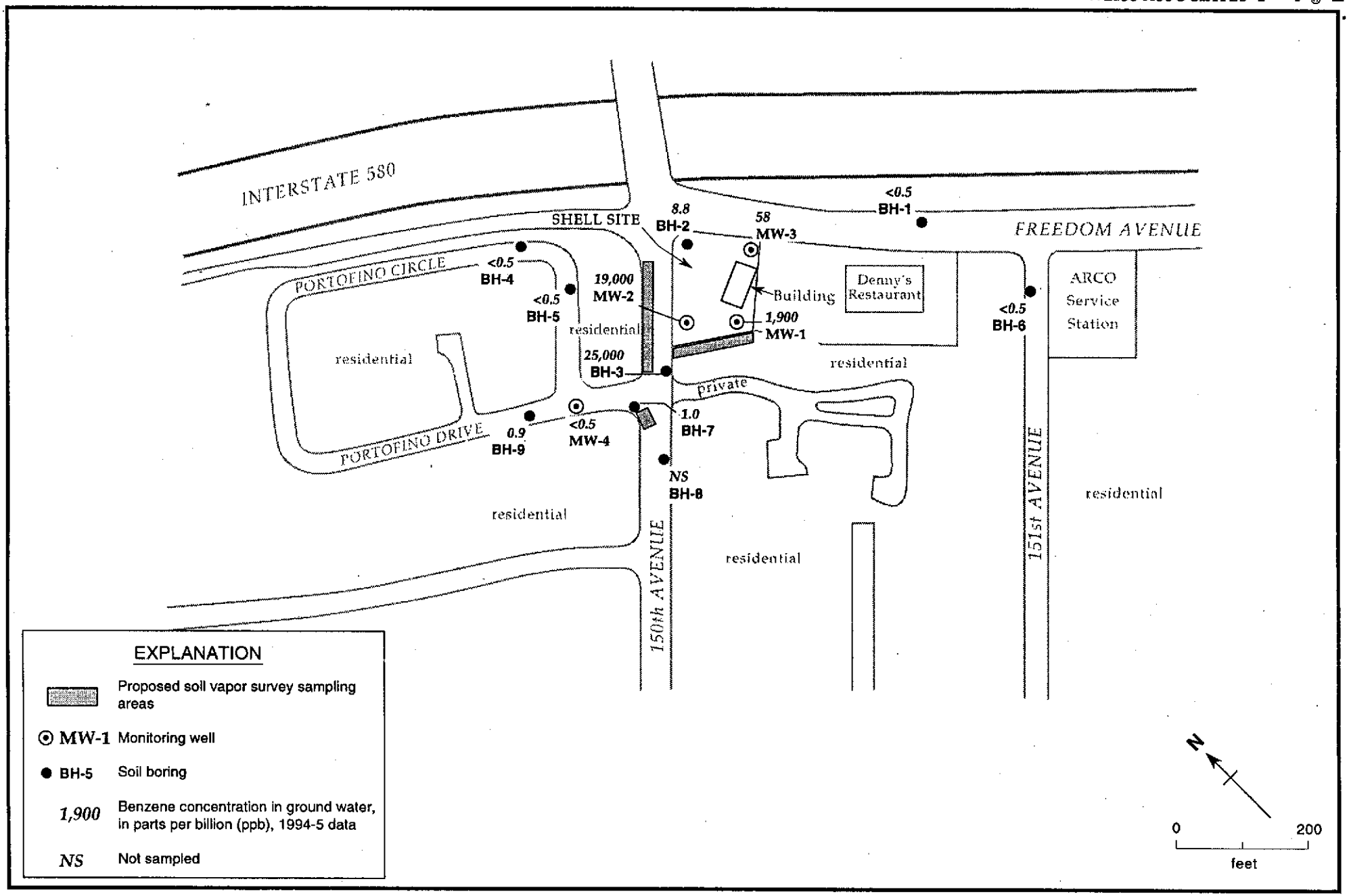

Figure 2. Proposed Soil Vapor Sample Locations - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

ATTACHMENT A

PREVIOUS SOIL ANALYTIC DATA

Table 1. Analytic Results for Soil - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

Boring ID (Well ID)	Sample - Depth (ft)	Date Sampled	Ground Water Depth (ft)	TPH-G	TPH-D	POG[a]	B	E	T	X	HVOCs
				<----------parts per million (mg/kg)---------->							
BH-A (MW-1)	5.0	03/05/90	34.1	<1	---	<100	<0.0025	<0.0025	<0.0025	<0.0025	b
	15.7			<1	---	<100	<0.0025	<0.0025	<0.0025	<0.0025	b
	24.7			<1	<1[e]	<100	0.020	<0.0025	<0.0025	<0.0025	b
	29.2			35	---	<100	0.23	0.20	<0.025	0.64	d
	41.2			<1	---	<100	<0.0025	<0.0025	<0.0025	<0.0025	b
BH-B (MW-2)	11.5	02/04/92	23.8	<1	---	---	0.0026	<0.0025	<0.0025	<0.0025	b
	16.5			<1	---	---	0.0058	<0.0025	<0.0025	<0.0025	---
	21.5			79	23[e]	---	0.20	0.60	1.0	4.1	b
	26.5			74	---	---	0.59	0.91	1.5	3.9	---
BH-C (MW-3)	11.5	02/05/92	28.8	<1	---	---	0.0042	0.0029	0.0039	<0.0025	b
	21.5			<1	---	---	<0.0025	<0.0025	<0.0025	<0.0025	b
	26.5			3.9	4.9[e]	---	<0.0025	<0.0025	<0.0025	0.0054	b
	31.5			68	---	---	<0.05	<0.05	<0.05	0.17	---

Abbreviations:

TPH-G = Total Petroleum Hydrocarbons as Gasoline by Modified EPA Method 8015
TPH-D = Total Petroleum Hydrocarbons as Diesel by Modified EPA Method 8015
POG = Petroleum Oil and Grease by American Public Health Association (APHA) Standard Method 503E
B = Benzene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
T = Toluene by EPA Method 8020
X = Xylenes by EPA Method 8020
HVOCs = Halogenated volatile organic compounds by EPA Method 8010
--- = Not analyzed
<n = Not detected above method detection limit of n ppm

Analytical Laboratory:

National Environmental Testing (NET) Pacific, Inc., Santa Rosa, California

Notes:

a = No total oil and grease detected above APHA Standard Method 503D detection limit of 50 ppm in any soil samples from boring BH-A
b = No HVOCs detected
c = No total petroleum hydrocarbons as motor oil detected above Modified EPA Method 8015 detection limit of 10 ppm
d = 0.0064 ppm 1,2-dichloroethane detected
e = NET reported that detected compounds are hydrocarbons lighter than diesel

Table 3. Hydrocarbons and Volatile Organic Compounds in Soil - Shell Service station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

Borehole/ Sample ID	Date Sampled	TPH-G	B	T	E	X	VOCs
		← parts per million (mg/kg) →					
BH-1-21	06/06/94	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---
BH-2-20	06/06/94	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---
BH-3-16	06/06/94	<1.0	0.013	<0.0050	<0.0050	<0.0050	ND
BH-4-20.6	06/07/94	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---
BH-5-15.6	06/07/94	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---
BH-6-20.5	06/07/94	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---
BH-7-15.8	02/14/95	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	---
BH-8-16.0	02/14/95	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	---
BH-9-19.5	02/14/95	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	---
BH-10-15.2	03/03/95	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---

Abbreviations:

TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015B = Benzene by EPA Method 8020
T = Toluene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
X = Xylenes by EPA Method 8020
VOCs = Volatile organic compounds by EPA Method 8010
ND = Not detected between detection limits of 0.005 and 0.050 ppm
--- = Not analyzed

Analytical Laboratory:

Sequoia Analytical, Inc. of Redwood City, California

ATTACHMENT B

PREVIOUS GROUND WATER ANALYTIC DATA

Table 2. Analytic Results for Ground Water - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	POG	B	E	T	X	1,2-DCA
			← parts per billion (µg/l) →							
MW-1	03/08/90	25.29	510	120[a]	<10,000	1.5	<0.5	0.8	5.4	12
	06/12/90	25.85	390	100[a]	<10,000	86	0.7	1.3	6.2	<0.4
	09/13/90	27.49	100	130[a]	<10,000	56	2.4	0.75	2.8	<0.4[b]
	12/18/90	27.41	480	<50[a]	<10,000	54	3.3	1.7	3.7	5.3
	03/07/91	25.79	80	<50[a]	---	266	1.2	<0.5	<1.5	6.7
	06/07/91	25.64	510	<50[a]	---	130	6.1	3.8	11	7.9
	09/17/91	27.54	330	120[ac]	---	67	3	<0.5	2.2	6
	12/09/91	27.81	140[d]	80	---	<0.5	1.7	<0.5	4.7	5.4
	03/01/92	23.36	<50	<50	---	<0.5	<0.5	<0.5	<0.5	3
	06/03/92	24.64	1,500	---	---	520	72	180	230	3
	09/01/92	26.74	130	---	---	16	1.8	1.4	3.4	1.3[e]
	12/04/92	27.14	150	---	---	360	1.8	0.7	2.1	3.3
	03/03/93	20.50	<50	---	---	1.5	<0.5	<0.5	<0.5	0.76
	06/17/93	22.42	1,600	---	---	340	120	120	440	3
	09/10/93	24.11	2,600	---	---	670	310	340	730	2.3
	12/13/93	23.73	11,000	---	---	470	380	320	2,300	6.3
	03/03/94	22.08	16,000	---	---	700	480	690	3,200	---
	06/06/94	23.10	7,500	---	---	420	200	280	1,000	3.1
	09/12/94	25.19	1,200	---	---	110	3.3	21	420	2.6
	12/19/94	23.06	4,600	---	---	470	230	330	1,300	3.7
	02/28/95	20.90	500	---	---	59	6.8	32	68	5.0
	06/26/95	20.40	5,500	---	---	740	300	420	1,800	8.6
	09/13/95	**22.62**	**84,000**	**---**	**---**	**1,900**	**3,000**	**2,600**	**14,000**	**12**
MW-2	02/24/92	19.61	17,000	2,700[c]	---	6,200	550	1,600	1,900	200
	03/01/92	21.11	86,000	1,000[c]	---	30,000	2,300	34,000	16,000	82
	06/03/92	21.58	87,000	---	---	28,000	2,000	18,000	10,000	<50
	09/01/92	23.46	110,000	---	---	21,000	1,900	13,000	7,800	83[h]
	12/04/92	23.89	42,000	---	---	15,000	960	2,400	2,900	100
	03/03/93	17.28	160,000	---	---	36,000	32,000	3,800	21,000	7.7

Table 2. Analytic Results for Ground Water - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California (continued)

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	POG	B	E	T	X	1,2-DCA
			← parts per billion (µg/l) →							
	03/03/93[h]	17.28	150,000	---	---	31,000	20,000	3,100	14,000	16
	06/17/93	19.06	65,000	---	---	34,000	3,200	15,000	11,000	37
	06/17/93[h]	19.06	62,000	---	---	28,000	2,700	14,000	10,000	36
	09/10/93[f]	20.88	72,000	---	---	24,000	2,300	16,000	11,000	28.0
	09/10/93[dupf]	20.88	71,000	---	---	23,000	2,300	15,000	10,000	27.0
	12/13/93	20.42	19,000	---	---	5,400	680	4,900	3,100	<0.5
	12/13/93[dup]		17,000	---	---	6,200	720	5,500	3,500	3.4
	03/03/94	18.48	110,000	---	---	21,000	2000	24,000	13,000	---
	03/03/94[dup]	18.48	93,000	---	---	19,000	1,800	22,000	12,000	---
	06/06/94	20.26	10,000	---	---	1,900	2,500	3,300	13,000	5.8
	06/06/94[dup]	20.26	99,000	---	---	9,900	2,400	12,000	12,000	5.7
	09/12/94	21.80	160,000	---	---	22,000	3,400	33,000	23,000	<0.4
	09/12/94[dup]	21.80	150,000	---	---	23,000	3,500	34,000	23,000	<0.4
	12/19/94	19.66	80,000	---	---	17,000	2,300	16,000	14,000	<0.4
	12/19/94[dup]	19.66	100,000	---	---	28,000	3,400	26,000	20,000	<0.4
	02/28/95	17.51	100,000	---	---	24,000	2,300	18,000	17,000	<0.4
	02/28/95[dup]	17.51	100,000	---	---	31,000	3,200	21,000	18,000	<0.4
	06/26/95	17.58	45,000	---	---	14,000	1,500	12,000	7,500	3.4
	06/26/95[dup]	17.58	68,000	---	---	13,000	1,800	11,000	7,700	---
	09/13/95	**19.28**	**110,000**	**---**	**---**	**19,000**	**2,800**	**19,000**	**15,000**	**7.2**
	09/13/95[dup]	**19.28**	**120,000**	**---**	**---**	**20,000**	**2,900**	**20,000**	**15,000**	**<0.4**
MW-3	02/24/92	25.60	4,500	1,300[c]	---	97	78	<5	18	9.1
	03/01/92	26.00	2,200	440	---	69	<0.5	<0.5	<0.5	13
	06/03/92	27.70	4,100	---	---	13	44	72	65	16
	09/01/92	29.46	1,900	---	---	20	5.5	6.8	<5	19
	09/01/92[dup]	29.46	1,900	---	---	21	3.4	6.6	<5	21
	12/04/92	29.93	2,400	---	---	8.2	<5	<5	<5	16
	12/04/92[dup]	29.93	2,100	---	---	11	5.7	<0.5	<0.5	18
	03/03/93	23.08	5,100	---	---	63	75	61	150	3.3

Table 2. Analytic Results for Ground Water - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California (continued)

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	POG	B	E	T	X	1,2-DCA
			← parts per billion (µg/l) →							
	06/17/93	25.21	4,000	---	---	94	82	140	150	23
	09/10/93	26.95	3,200	---	---	140	12.5	12.5	12.5	20.0
	12/13/93	26.52	6,200	---	---	<12.5	<12.5	<12.5	<12.5	13
	03/03/94	24.50	4,500	---	---	73	<5	<5	<5	---
	06/06/94	26.33	3,200	---	---	<0.5	3.1	<0.5	<0.5	16
	09/12/94	27.98	3,900	---	---	<0.5	9.6	<0.5	4.1	7.8
	12/19/94	25.63	2,400	---	---	21	4.2	22	2.6	25
	02/28/95	23.45	4,000	---	---	58	7.1	<0.5	3.5	18
	06/26/95	23.64	3,900	---	---	8.1	12	<0.5	2.4	15
	09/13/95	**25.40**	**4,100**	**---**	**---**	**58**	**5.5**	**5.5**	**<0.5**	**6.7**
MW-4	03/24/95	9.16	<50	---	---	<0.5	<0.5	<0.5	<0.5	<0.4
	06/26/95	12.06	<50	---	---	<0.5	<0.5	<0.5	<0.5	<0.4
	09/13/95	**13.90**	**<50**	**---**	**---**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.4**
Trip Blank	03/08/90		<50	---	---	<0.5	<0.5	<0.5	<0.5	---
	06/12/90		<50	---	---	<0.5	<0.5	<0.5	<0.5	---
	12/18/90		<50	---	---	<0.5	<0.5	<0.5	<0.5	---
	03/07/91		<50	---	---	<0.5	<0.5	<0.5	<0.5	---
	06/07/91		<50	---	---	<0.5	<0.5	<0.5	<0.5	---
	09/17/91		<50	---	---	<0.5	<0.5	<0.5	<0.5	---
	12/09/91		<50	---	---	<0.5	<0.5	<0.5	<0.5	---
	02/24/92		<50	---	---	<0.5	0.6	2.5	2.2	---
	03/01/92		<50	---	---	<0.5	<0.5	<0.5	<0.5	---
	06/03/92		<50	---	---	<0.5	<0.5	<0.5	<0.5	---
	09/01/92		<50	---	---	<0.5	<0.5	<0.5	<0.5	<0.5
	12/04/92		<50	---	---	<0.5	<0.5	<0.5	<0.5	<0.5
	03/03/93		<50	---	---	<0.5	<0.5	<0.5	<0.5	<0.5
	06/17/93		<50	---	---	<0.5	<0.5	<0.5	<0.5	<0.5
	09/10/93		<50	---	---	<0.5	<0.5	<0.5	<0.5	---

Table 2. Analytic Results for Ground Water - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California (continued)

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	POG	B	E	T	X	1,2-DCA
			← parts per billion (µg/l) →							
	12/13/93		<50	---	---	<0.5	<0.5	<0.5	<0.5	<0.5[k]
	03/03/94		<50	---	---	<0.5	<0.5	<0.5	<0.5	---
	06/06/94		<50	---	---	<0.5	<0.5	<0.5	<0.5	---
	09/12/94		<50	---	---	<0.5	<0.5	<0.5	<0.5	---
	12/19/94		<50	---	---	<0.5	<0.5	<0.5	<0.5	---
	02/28/95		<50	---	---	<0.5	<0.5	<0.5	<0.5	---
	03/24/95		<50	---	---	<0.5	<0.5	<0.5	<0.5	---
	06/26/95		<50	---	---	4.1	<0.5	3.0	1.5	---
	09/13/95		**<50**	**---**	**---**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**---**
Bailer Blank	03/08/90		<50	---	---	<0.5	<0.5	<0.5	<0.5	---
	09/01/92		<50	---		<0.5	<0.5	0.7	<0.5	<0.5
	12/04/92		60	---		<0.5	<0.5	<0.5	<0.5	<0.5[j]
DTSC MCLs			NE	NE	NE	1	680	100[l]	1,750	5.0

Table 2. Analytic Results for Ground Water - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California (continued)

Abbreviations:

TPH-G = Total Petroleum Hydrocarbons as Gasoline by Modified EPA Method 8015
TPH-D = Total Petroleum Hydrocarbons as Diesel by Modified EPA Method 8015
POG = Petroleum oil and grease by American Public Health Association Standard Method 503E or 5520F
B = Benzene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
T = Toluene by EPA Method 8020
X = Xylenes by EPA Method 8020
1,2-DCA = 1,2-Dichloroethane by EPA Method 601
--- = Not analyzed
<n = Not detected above method detection limit of n ppb
DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water
NE = Not established

Notes:

a = No total petroleum hydrocarbons as motor oil detected above modified EPA Method 8015 detection limit of 500 ppb
b = Tetrachloroethene (PCE) detected at 24 ppb by EPA Method 601; DTSC MCL for PCE = 5 ppb
c = Result is due to hydrocarbon compounds lighter than diesel
d = Result due to a non-gasoline hydrocarbon
e = In the matrix spike/matrix spike duplicate of sample MW-1, the RPD for Freon 113 and 1,3-dichlorobenzene was greater than 25%
f = The MW-2 and Dup samples each contained 1.6 ppb of methylene chloride which is within normal laboratory background levels.
h = Sample MW-2 was diluted 1:100 for EPA Method 8010 due to the interfering hydrocarbon peaks
j = The trip and field blank samples contained 14 and 10 mg/L 1,3-dichlorobenzene, respectively
k = 1.4 mg/L Chloroethene detected in equipment blank, trip blank not analyzed
l = DTSC recommended action level for drinking water; MCL not established

Table 4. Hydrocarbon and Volatile Organic Compounds in Grab Ground Water Samples - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

Borehole/ Sample ID	Date Sampled	TPH-G	B	T	E	X	VOCs
		← parts per billion (µg/L) →					
BH-1	06/06/94	<50	<0.50	<0.50	<0.50	<0.50	---
BH-2	06/06/94	5,200[a]	8.8	<0.50	9.1	<0.50	---
BH-3	06/06/94	120,000[b]	25,000	14,000	3,100	13,000	ND
BH-4	06/07/94	<50	<0.50	<0.50	<0.50	<0.50	---
BH-5	06/07/94	<50	<0.50	<0.50	<0.50	<0.50	---
BH-6	06/07/94	<50	<0.50	<0.50	<0.50	<0.50	---
BH-7-17-W	02/14/95	100	1.0	1.0	<0.5	<0.5	—
BH-9-20-W	02/14/95	90	0.9	0.9	<0.5	<0.5	—

Abbreviations:

TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015
B = Benzene by EPA Method 8020
T = Toluene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
X = Xylenes by EPA Method 8020
VOCs = Volatile organic compounds by EPA Method 8010
--- = Not analyzed
ND = Not detected between detection limits of 10 and 100 ppb.

Analytical Laboratory:

Sequoia Analytical, Inc. of Redwood City, California

Notes:

a = Chromatogram pattern as weathered gasoline.
b = Chromatogram pattern as gasoline.

TRANSMISSION VERIFICATION REPORT

TIME: 12/20/1995 13:42
NAME: WEISS ASSOC EMYVL
FAX : 510-547-5043
TEL : 510-450-6000

DATE,TIME	12/20 13:32
FAX NO./NAME	93379335-8181
DURATION	00:09:11
PAGE(S)	18
RESULT	OK
MODE	STANDARD