



January 4, 1993

Page 2

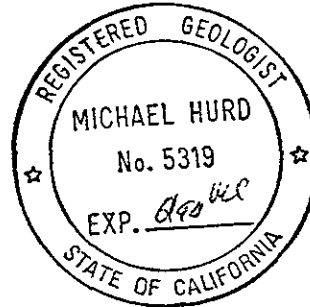
If you have any questions regarding the contents of this letter, please call.

Sincerely,

**Pacific Environmental Group, Inc.**



Michael Hurd  
Project Geologist  
RG 5319



Attachments: Table 1 - Groundwater Elevation Data  
Table 2 - Groundwater Analytical Data -  
Total Petroleum Hydrocarbons  
(TPH as Gasoline and BTEX Compounds)  
Table 3 - Groundwater Analytical Data -  
Total Petroleum Hydrocarbons  
(TPH as Diesel and Oil and Grease)  
Figure 1- Site Location Map  
Figure 2- Groundwater Elevation Contour Map  
Figure 3- TPH-g/Benzene/TPH-d Concentration Map  
Attachment A - Groundwater Sampling Report

cc: Mr. Lawrence Seto, Alameda County Department of Environmental Health  
Dr. Mohsen Mehran, Owner Consultant  
Mr. Michael K. Johnson, Larson, Burnham and Turner  
Mr. Richard Fenn, Righetti Law Firm  
Mr. Richard A. Schoenberger, Esq., Walkup, Shelby, Bastian, Melodia, Kelly,  
Echeverria and Link  
Mr. David Swope, Shell Oil Company

**Table 1  
Groundwater Elevation Data**

Former Shell Service Station  
2724 Castro Valley Boulevard at Lake Chabot Road  
Castro Valley, California

Well Number	Date Gauged	Well Elevation (feet)	Depth to Water (feet, TOC)	Groundwater Elevation (feet)
MW-1	02/08/90	99.78	8.39	91.39
	04/20/90		9.21	90.57
	07/30/90		9.21	90.57
	10/25/90		9.44	90.34
	01/15/91		9.11	90.67
	04/19/91		5.58	94.20
	07/16/91		7.58	92.20
	10/08/91		8.25	91.53
	02/04/92		8.52	91.26
	04/06/92		6.75	93.03
	08/26/92		9.89	89.89
	11/06/92		9.01	90.77
MW-2	02/08/90	100.83	7.33	93.50
	04/20/90		8.63	92.20
	07/30/90		8.78	92.05
	10/25/90		9.50	91.33
	01/15/91		8.52	92.31
	04/19/91		6.90	93.93
	07/16/91		9.01	91.82
	10/08/91		8.82	92.01
	02/04/92		7.46	93.37
	04/06/92		6.91	93.92
	08/26/92		9.28	91.55
	11/06/92		8.59	92.24
MW-3	02/08/90	101.48	8.91	92.57
	04/20/90		10.20	91.28
	07/30/90		10.61	90.87
	10/25/90		10.00	91.48
	01/15/91		9.74	91.74
	04/19/91		7.92	93.56
	07/16/91		9.40	92.08
	10/08/91		9.62	91.86
	02/04/92		8.74	92.74
	04/06/92		7.12	94.36
	08/26/92		9.58	91.90
	11/06/92		8.95	92.53

Table 1 (continued)  
Groundwater Elevation Data

Former Shell Service Station  
2724 Castro Valley Boulevard at Lake Chabot Road  
Castro Valley, California

Well Number	Date Gauged	Well Elevation (feet)	Depth to Water (feet, TOC)	Groundwater Elevation (feet)
MW-5	02/08/90	99.90	8.80	91.10
	04/20/90		9.35	90.55
	07/30/90		9.49	90.41
	10/25/90		10.12	89.78
	01/15/91		9.26	90.64
	04/19/91		6.52	93.38
	07/16/91		9.12	90.78
	10/08/91		9.22	90.68
	02/04/92		8.13	91.77
	04/06/92		5.53	94.37
	08/26/92		9.25	90.65
	11/06/92		9.02	90.88
OMW-6	07/16/91	101.48	8.60	92.88
	10/08/91		8.82	92.66
	02/04/92		7.47	94.01
	04/06/92		5.80	95.68
	08/26/92		9.18	92.30
	11/06/92		8.29	93.19
MW-7	07/16/91	99.54	8.70	90.84
	10/08/91		8.74	90.80
	02/04/92		7.78	91.76
	04/06/92		5.87	93.67
	08/26/92		8.93	90.61
	11/06/92		8.51	91.03
OMW-8	07/16/91	100.18	8.40	91.78
	10/08/91		8.74	91.44
	02/04/92		8.22	91.96
	04/06/92		6.82	93.36
	08/26/92		9.15	91.03
	11/06/92		8.69	91.49
TOC = Top of casing All elevations are tied into a temporary benchmark elevation of 100 feet.				

Table 2  
**Summary of Groundwater Analytical Data**  
 Total Petroleum Hydrocarbons  
 (TPH as Gasoline and BTEX Compounds)

Former Shell Service Station  
 2724 Castro Valley Boulevard at Lake Chabot Road  
 Castro Valley, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-1	02/09/90	<1,000	0.58	0.63	<0.5	<0.5
	04/20/90	<50	<0.5	<0.5	<0.5	<0.5
	07/31/90	<50	<0.5	<0.5	<0.5	<0.5
	10/25/90	100	<0.5	<0.5	<0.5	<0.6
	01/15/91	60	<0.5	<0.5	<0.5	<0.5
	01/15/91	<50	<0.5	<0.5	<0.5	<0.5
	04/19/91	<50	7.7	<0.5	<0.5	<0.5
	04/19/91	<50	7.4	<0.5	<0.5	<0.5
	07/16/91	<50	<0.5	<0.5	<0.5	<0.5
	10/08/91	<50	<0.5	<0.5	<0.5	<0.5
	02/04/92	<50	<0.5	<0.5	<0.5	<0.5
	04/06/92	50	<0.5	<0.5	<0.5	<0.5
	08/26/92	<50	<0.5	<0.5	<0.5	<0.5
	11/12/92	<50	<0.5	<0.5	<0.5	<0.5
MW-2	02/09/90	8,600	360	410	6.5	670
	04/20/90	9,100	500	330	110	900
	07/31/90	5,300	550	38	<0.5	280
	10/25/90	4,800	490	22	21	156
	01/15/91	5,700	320	29	120	530
	04/19/91	3,900	100	77	100	93
	07/16/91	1,800	100	5.8	41	31
	07/16/91	2,700	130	7.6	62	45
	10/08/91	1,000	17	<0.5	25	25
	02/04/92	1,700	190	5.8	18	110
	04/06/92	3,800	930	50	110	190
	05/03/92	2,400	610	8.8	90	<0.5
	08/26/92	520	36	2.0	12	7.9
	08/26/92(D)	450	33	1.7	11	3.4
	11/12/92	310	30	6.2	5.1	4.3
11/12/92(D)	360	31	6.5	5.1	4.4	
MW-3	02/09/90	<1,000	<0.5	<0.5	<0.5	<0.5
	04/20/90	<50	<0.5	<0.5	<0.5	<0.5
	07/31/90	<50	<0.5	<0.5	<0.5	<0.5
	10/25/90	<50	<0.5	<0.5	<0.6	<0.6
	01/15/91	<50	<0.5	<0.5	<0.5	<0.5
	04/19/91	<50	<0.5	<0.5	<0.5	<0.5
	07/16/91	<50	<0.5	<0.5	<0.5	<0.5
	10/08/91	<50	<0.5	<0.5	<0.5	<0.5
	02/04/92	<50	4	2	7	3.2
	04/06/92	<50	<0.5	<0.5	<0.5	<0.5
	08/26/82	<50	<0.5	<0.5	<0.5	<0.5
	11/12/92	<50	<0.5	<0.5	<0.5	<0.5

Table 2 (continued)  
**Summary of Groundwater Analytical Data**  
 Total Petroleum Hydrocarbons  
 (TPH as Gasoline and BTEX Compounds)

Former Shell Service Station  
 2724 Castro Valley Boulevard at Lake Chabot Road  
 Castro Valley, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-5	02/09/90	<1,000	<0.5	<0.5	<0.5	<0.5
	04/20/90	<50	<0.5	<0.5	<0.5	<0.5
	07/31/90	<50	<0.5	<0.5	<0.5	<0.5
	10/25/90	<50	<0.5	<0.7	<0.6	<0.6
	01/15/91	<50	<0.5	<0.5	<0.5	<0.5
	04/19/91	<50	<0.5	<0.5	<0.5	<0.5
	07/16/91	<50	<0.5	<0.5	<0.5	<0.5
	10/08/91	<50	<0.5	<0.5	<0.5	<0.5
	02/04/92	<50	<0.5	<0.5	<0.5	<0.5
	04/06/92	<50	<0.5	<0.5	<0.5	<0.5
	08/26/92	<50	<0.5	<0.5	<0.5	<0.5
	11/12/92	<50	<0.5	<0.5	<0.5	<0.5
OMW-6	07/16/91	<50	<0.5	<0.5	<0.5	<0.5
	10/08/91	<50	<0.5	<0.5	<0.5	<0.5
	02/04/92	<50	<0.5	<0.5	<0.5	<0.5
	04/06/92	<50	<0.5	<0.5	<0.5	<0.5
	08/26/92	<50	<0.5	<0.5	<0.5	<0.5
	11/12/92	<50	<0.5	<0.5	<0.5	<0.5
MW-7	07/16/91	1,300	440	140	6.9	160
	10/08/91	520	230	36	26	54
	02/04/92	640	130	51	26	79
	04/06/92	80	32	1.7	2.3	4.4
	05/13/92	<50	3.1	1.7	0.9	3.8
	08/26/92	63	1.0	<0.5	2.6	<0.5
	11/12/92	73	11	<0.5	3.7	<0.5
OMW-8	07/16/91	<50	<0.5	0.8	<0.5	<0.5
	10/08/91	<50	<0.5	<0.5	<0.5	<0.5
	02/04/92	<50	0.9	1.9	0.6	3.6
	04/06/92	<50	<0.5	<0.5	<0.5	<0.5
	08/26/92	<50	<0.5	<0.5	<0.5	<0.5
	11/12/92	<50	<0.5	<0.5	<0.5	<0.5

ppb = Parts per billion  
 (D) = Duplicate sample

Table 3  
**Groundwater Analytical Data**  
 Total Petroleum Hydrocarbons  
 (TPH as Diesel and Motor Oil)

Former Shell Service Station  
 2724 Castro Valley Boulevard at Lake Chabot Road  
 Castro Valley, California

Well Number	Date Sampled	TPH as Diesel (ppb)	Motor Oil (ppb)
MW-1	02/09/90	NA	NA
	04/20/90	NA	NA
	07/31/90	NA	NA
	10/25/90	<50	NA
	01/15/91	<50	NA
	01/15/91	<50	NA
	04/19/91	<50	NA
	04/19/91	<50	NA
	07/16/91	<50	<50
	10/08/91	<50	<50
	02/04/92	<50	NA
	04/06/92	<50	NA
	08/26/92	51	NA
	11/12/92	<50	NA
	MW-2	02/09/90	4,100
04/20/90		1,800	NA
07/31/90		60	NA
10/25/90		300	NA
01/15/91		680	NA
04/19/91		306	NA
07/16/91		430	<50
07/16/91		540	<50
10/08/91		110	<50
02/04/92		870	NA
04/06/92		1,000	NA
05/13/92		570	NA
08/26/92		63	NA
08/26/92(D)		63	NA
11/12/92		160	NA
11/12/92(D)	180	NA	
MW-3	02/09/90	NA	NA
	04/20/90	NA	NA
	07/31/90	NA	NA
	10/25/90	<50	NA
	01/15/91	<50	NA
	04/19/91	<50	NA
	07/16/91	<50	1,400
	10/08/91	<50	<50
	02/04/92	<50	NA
	04/06/92	<50	NA
	08/24/92	<50	NA
	11/12/92	<50	NA

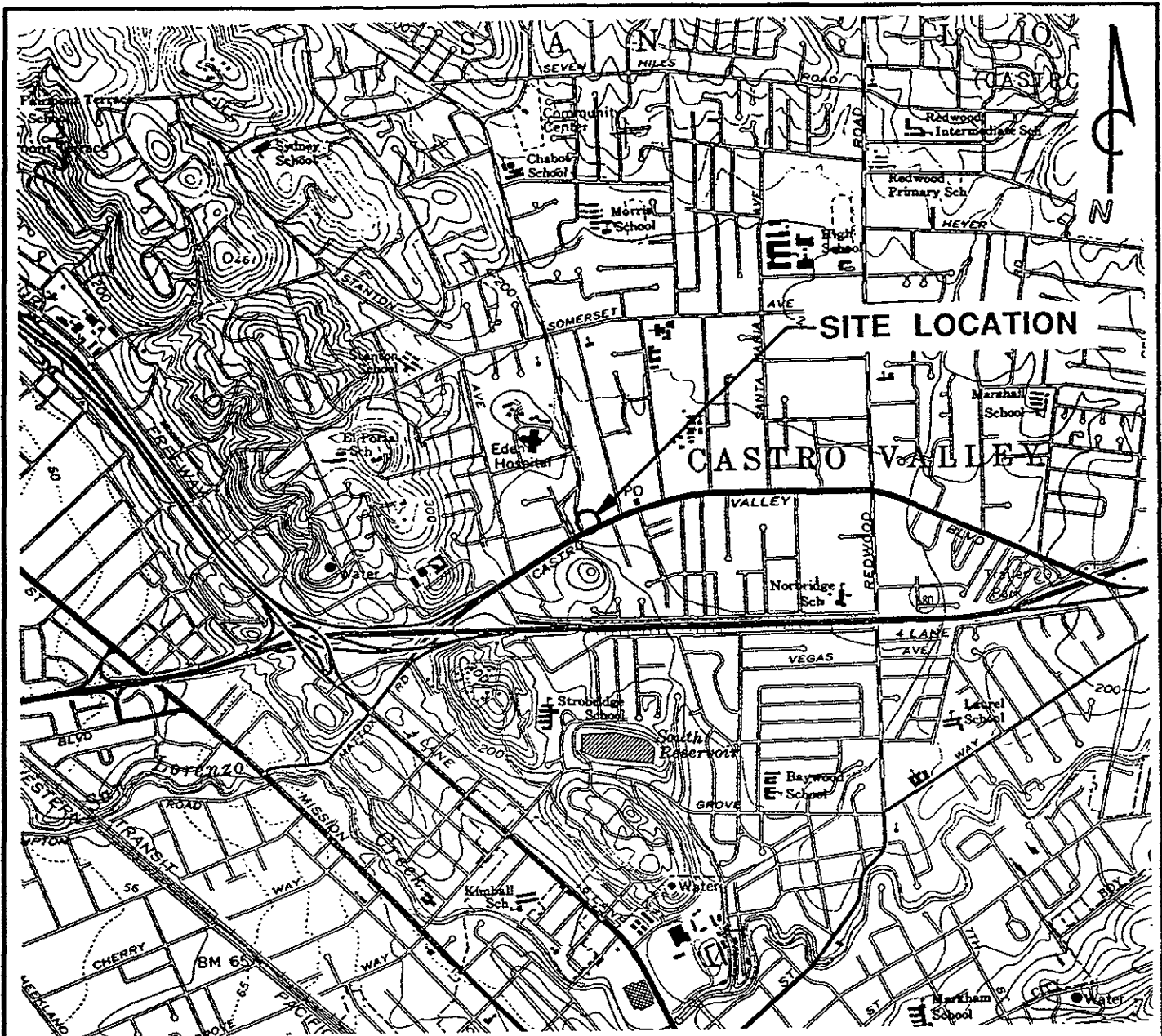
Table 3 (continued)  
**Groundwater Analytical Data**

Former Shell Service Station  
 2724 Castro Valley Boulevard at Lake Chabot Road  
 Castro Valley, California

Well Number	Sample Date	TPH-d (ppb)	Motor Oil (ppb)
MW-5	02/09/90	NA	NA
	04/20/90	NA	NA
	07/31/90	NA	NA
	10/25/90	<50	NA
	01/15/91	<50	NA
	04/19/91	<50	NA
	07/16/91	<50	<50
	10/08/91	<50	<50
	02/04/92	<50	NA
	04/06/92	<50	NA
	08/26/92	<50	NA
	11/12/92	<50	NA
	OMW-6	07/16/91	<50
10/08/91		<50	<50
02/04/92		<50	NA
04/06/92		<50	NA
08/26/92		<50	NA
11/12/92		<50	NA
MW-7	07/16/92	270	1,100
	10/08/92	<50	<50
	02/04/92	140**	NA
	04/06/92	<50	NA
	05/13/92	<50	NA
	08/26/92	<50	NA
	11/12/92	<50	NA
OMW-8	07/16/91	<50	<50
	10/08/91	<50	<50
	02/04/92	<50	NA
	04/06/92	<50	NA
	08/26/92	<50	NA
	11/12/92	<50	NA

ppb = Parts per billion  
 NA = Not Analyzed  
 NS = Not Sampled  
 (D) = Duplicate sample  
 \* Did not match motor oil chromatographic pattern.  
 Wax-like pattern present.  
 \*\* The positive result for TPH-d analysis on this sample appears to be lighter hydrocarbon than diesel.  
 See individual analytical reports for detection limits.





**SITE LOCATION**

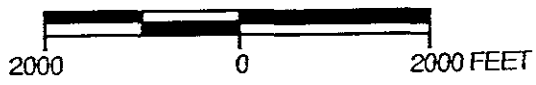
**CASTRO VALLEY**



**QUADRANGLE LOCATION**

**REFERENCES:**  
 USGS 7.5 MIN. TOPOGRAPHIC MAP  
 TITLED: HAYWARD, CALIFORNIA  
 DATED: 1959 REVISED: 1980

**SCALE**

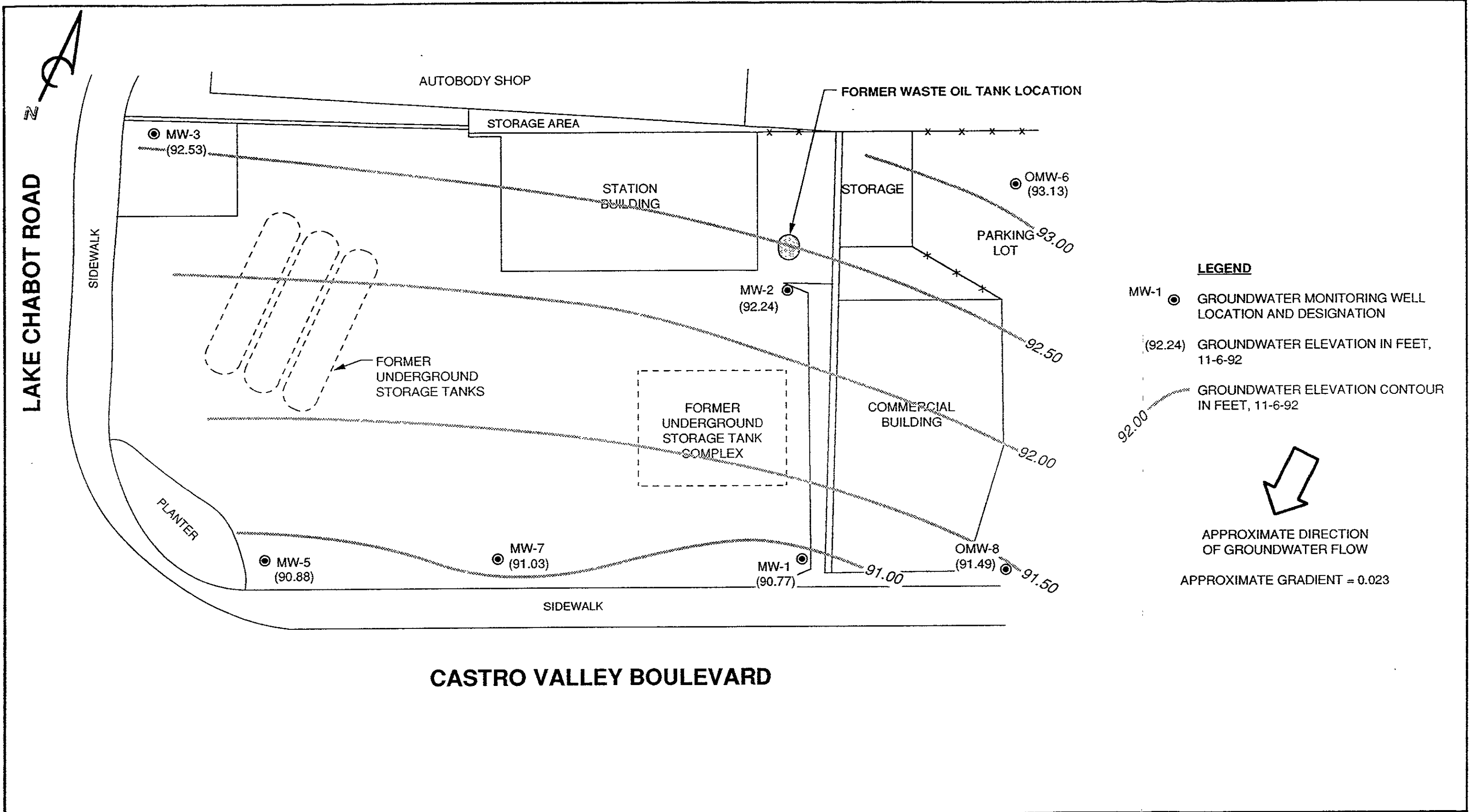


**PACIFIC ENVIRONMENTAL GROUP, INC.**

**FORMER SHELL SERVICE STATION**  
 2724 Castro Valley Boulevard at Lake Chabot Road  
 Castro Valley, California

**SITE LOCATION MAP**

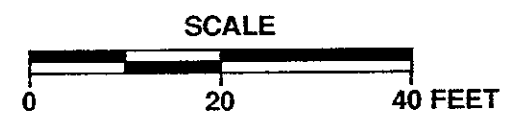
**FIGURE: 1**  
**PROJECT: 305-94.01**



**CASTRO VALLEY BOULEVARD**



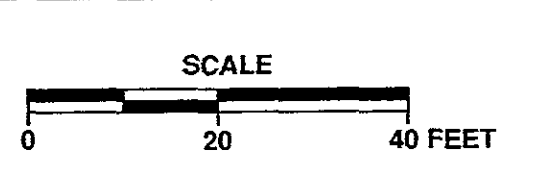
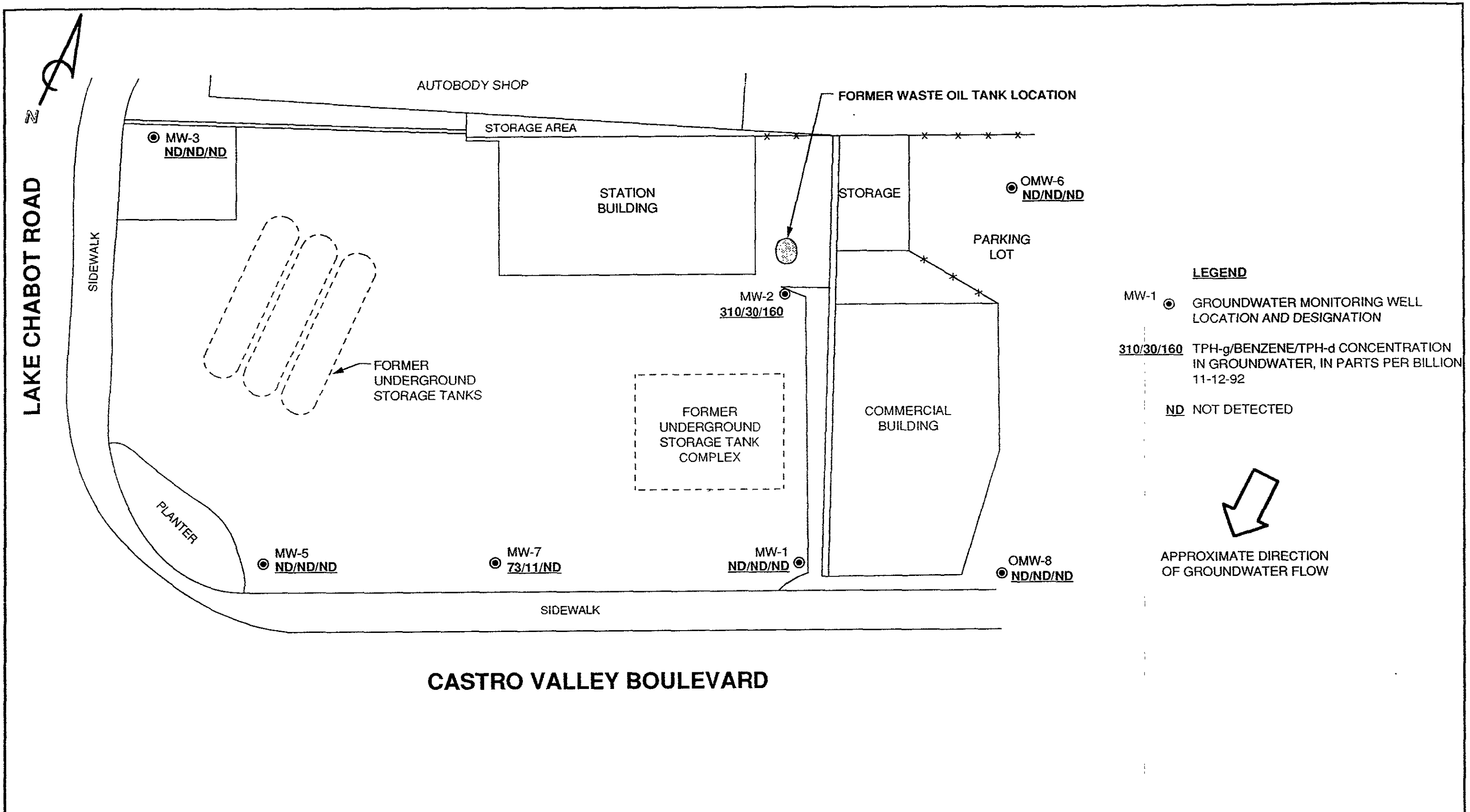
PACIFIC ENVIRONMENTAL GROUP, INC.



**FORMER SHELL SERVICE STATION**  
 2724 Castro Valley Boulevard at Lake Chabot Road,  
 Castro Valley, California

**GROUNDWATER ELEVATION CONTOUR MAP**

FIGURE:  
**2**  
 PROJECT:  
 305-94.01



**FORMER SHELL SERVICE STATION**  
 2724 Castro Valley Boulevard at Lake Chabot Road,  
 Castro Valley, California

TPH-g /BENZENE/TPH-d CONCENTRATION MAP

FIGURE:  
**3**

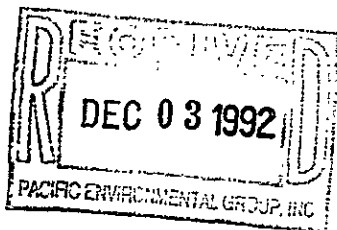
PROJECT:  
 305-94.01

**ATTACHMENT A**  
**GROUNDWATER SAMPLING REPORT**



**EMCON**  
ASSOCIATES

Consultants in Wastes  
Management and  
Environmental Control



November 30, 1992  
Project: OG67-068.01  
WIC#: 204-1381-0407

Ms. Rhonda Barrick  
Pacific Environmental Group, Inc.  
2025 Gateway Place, Suite 440  
San Jose, California 95110

Re: Fourth quarter 1992 ground-water monitoring report, Shell Oil  
Company, 2724 Castro Valley Boulevard, Castro Valley, California

Dear Ms. Barrick:

This letter presents the results of the fourth quarter 1992 ground-water monitoring event for the Shell Oil Company (Shell) site located at 2724 Castro Valley Boulevard, Castro Valley, California (figure 1). Fourth quarter monitoring was conducted on November 6 and 12, 1992. The site is monitored quarterly.

### **GROUND-WATER LEVEL SURVEY**

A water-level survey preceded the purging and sampling of the monitoring wells. The wells included in the survey are identified in figure 2 (supplied by Converse Environmental West). During the survey, wells MW-1, MW-2, MW-3, MW-5, OMW-6, MW-7, and OMW-8 were measured for depth to water, floating product thickness, and total depth. Depth to water and floating product thickness were measured to the nearest 0.01 foot with an oil/water interface probe. No floating product was observed in any wells. Total depth was measured to the nearest 0.1 foot. Results of the fourth quarter water-level survey, and available data from four previous surveys, are summarized in table 1.

### **SAMPLING AND ANALYSIS**

Ground-water samples were collected from wells MW-1, MW-2, MW-3, MW-5, OMW-6, MW-7, and OMW-8 on November 12, 1992. Prior to sample collection, the wells were purged with polyvinyl chloride bailers. During the purging operation, ground water was monitored for pH, electrical conductivity, and temperature as a function of volume of water removed. Purging continued until these parameters were stable and a minimum of three casing volumes of ground water were removed. Wells MW-5 and OMW-8 were evacuated to dryness before the removal of three casing volumes. The wells were allowed to recharge for up to 24 hours. Samples were collected after the wells had recharged to a sufficient level. Field measurements from fourth quarter monitoring, and

OG6706801B.DOC



available measurements from four previous monitoring events, are summarized in table 1. Purge water from the monitoring wells was contained in 55-gallon drums. The drums were identified with Shell-approved labels and secured for on-site storage.

Ground-water samples were collected with a Teflon® bailer, labeled, placed on ice, and transported to Anametrix Inc. for analysis. Shell chain-of-custody documents accompanied all samples to the laboratory.

All equipment that was placed down a well or that came in contact with ground water was steam cleaned with deionized water prior to use at each well.

Quality control samples for fourth quarter monitoring included a trip blank (TB), a field blank (FB), and a duplicate well sample (MW-2D) collected from well MW-2. All water samples collected during fourth quarter monitoring were analyzed for total petroleum hydrocarbons as gasoline (TPH-g); benzene, toluene, ethylbenzene, and total xylenes (BTEX); and total petroleum hydrocarbons as diesel (TPH-d).

#### **ANALYTICAL RESULTS**

Analytical results for the fourth quarter 1992 monitoring event, and available results from four previous monitoring events, are summarized in table 2. The original certified analytical report and final chain-of-custody document are attached.

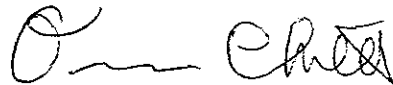
If you have any questions, please call.

Very truly yours,

EMCON Associates



David Larsen  
Environmental Sampling Coordinator



Orrin Childs  
Environmental Sampling Supervisor

DL/OC:dl

Attachments: Table 1 - Monitoring well field measurement data  
Table 2 - Summary of analytical results  
Figure 1 - Site location  
Figure 2 - Site Map  
Certified analytical report  
Chain-of-custody document

Table 1  
Monitoring Well Field Measurement Data  
Fourth Quarter 1992

Shell Station: 2724 Castro Valley Boulevard  
Castro Valley, California  
WIC #: 204-1381-0407

Date: 12/02/92  
Project Number: G67-68.01

Well Desig- nation	Water Level Field Date	TOC Elevation (ft-PSD)	Depth to Water (feet)	Ground- water Elevation (ft-PSD)	Total Well Depth (feet)	Floating Product Thickness (feet)	Water Sample Field Date	pH  (std. units)	Electrical Conductivity (micromhos/cm)	Temperature  (degrees F)	Turbidity  (NTU)
MW-1	04/19/91	99.78	5.58	94.20	NR	ND	04/19/91	NR	NR	NR	NR
MW-1	07/16/91	99.78	7.58	92.20	NR	ND	07/16/91	NR	NR	NR	NR
MW-1	10/08/91	99.78	8.25	91.53	15.3	ND	10/08/91	7.18	1350	21.3^	NR
MW-1	08/26/92	99.78	9.23	90.55	14.3	ND	08/26/92	7.31	1410	75.2	365
MW-1	11/08/92	99.78	9.01	90.77	14.3	ND	11/12/92	7.35	1560	72.3	169
MW-2	04/19/91	100.83	6.90	93.93	NR	ND	04/19/91	NR	NR	NR	NR
MW-2	07/16/91	100.83	9.01	91.82	NR	ND	07/16/91	NR	NR	NR	NR
MW-2	10/08/91	100.83	8.82	92.01	14.9	ND	10/08/91	7.10	1310	21.0^	NR
MW-2	08/26/92	100.83	8.74	92.09	14.8	ND	08/26/92	7.70	1828	74.3	129
MW-2	11/06/92	100.83	8.59	92.24	14.8	ND	11/12/92	7.38	1278	62.6	904
MW-3	04/19/91	101.48	7.92	93.56	NR	ND	04/19/91	NR	NR	NR	NR
MW-3	07/16/91	101.48	9.40	92.08	NR	ND	07/16/91	NR	NR	NR	NR
MW-3	10/08/91	101.48	9.62	91.86	24.4	ND	10/08/91	7.26	1900	23.6^	NR
MW-3	08/26/92	101.48	9.31	92.17	25.2	ND	08/26/92	7.72	3270	80.5	>1000
MW-3	11/06/92	101.48	8.95	92.53	25.3	ND	11/12/92	7.24	3570	62.4	>1000
MW-5	04/19/91	99.90	6.52	93.38	NR	ND	04/19/91	NR	NR	NR	NR
MW-5	07/16/91	99.90	9.12	90.78	NR	ND	07/16/91	NR	NR	NR	NR
MW-5	10/08/91	99.90	9.22	90.68	22.8	ND	10/08/91	7.42	1890	21.3^	NR
MW-5	08/26/92	99.90	8.96	90.94	22.4	ND	08/26/92	7.40	1829	76.3	109
MW-5	11/06/92	99.90	9.02	90.88	22.7	ND	11/12/92	7.46	2020	69.0	>1000

TOC = top of casing

ft-PSD = elevation in feet, relative to project site datum

std. units = standard pH units

micromhos/cm = micromhos per centimeter

degrees F = degrees Fahrenheit

NTU = nephelometric turbidity units

NR = Not reported; data not available

ND = None detected

^ = Temperature measured in degrees centigrade



Table 1  
Monitoring Well Field Measurement Data  
Fourth Quarter 1992

Shell Station: 2724 Castro Valley Boulevard  
Castro Valley, California  
WIC #: 204-1381-0407

Date: 12/02/92  
Project Number: Q67-68.01

Well Designation	Water Level Field Date	TOC Elevation (ft-PSD)	Depth to Water (feet)	Ground-water Elevation (ft-PSD)	Total Well Depth (feet)	Floating Product Thickness (feet)	Water Sample Field Date	pH (std. units)	Electrical Conductivity (micromhos/cm)	Temperature (degrees F)	Turbidity (NTU)
OMW-6	07/16/91	101.48	8.60	92.88	NR	ND	07/16/91	NR	NR	NR	NR
OMW-6	10/08/91	101.48	8.82	92.66	21.8	ND	10/08/91	7.39	2750	19.7 <sup>^</sup>	NR
OMW-6	08/26/92	101.48	8.63	92.85	22.1	ND	08/26/92	7.20	2700	78.0	583
OMW-6	11/06/92	101.48	8.29	93.19	22.1	ND	11/12/92	7.27	2560	69.9	632
MW-7	07/16/91	99.54	8.70	90.84	NR	ND	07/16/91	NR	NR	NR	NR
MW-7	10/08/91	99.54	8.74	90.80	20.0	ND	10/08/91	7.00	1690	19.8 <sup>^</sup>	NR
MW-7	08/26/92	99.54	8.61	90.93	20.3	ND	08/26/92	7.28	1418	69.1	151
MW-7	11/06/92	99.54	8.51	91.03	20.2	ND	11/12/92	7.25	1440	68.3	>1000
OMW-8	07/16/91	100.18	8.40	91.78	NR	ND	07/16/91	NR	NR	NR	NR
OMW-8	10/08/91	100.18	8.74	91.44	19.7	ND	10/08/91	7.47	1150	20.1 <sup>^</sup>	NR
OMW-8	08/26/92	100.18	8.78	91.40	19.8	ND	08/26/92	6.26	1160	75.0	157
OMW-8	11/06/92	100.18	8.69	91.49	20.0	ND	11/12/92	7.51	1129	62.8	>1000

TOC = top of casing  
ft-PSD = elevation in feet, relative to project site datum  
std. units = standard pH units  
micromhos/cm = micromhos per centimeter  
degrees F = degrees Fahrenheit  
NTU = nephelometric turbidity units  
NR = Not reported; data not available  
ND = None detected  
<sup>^</sup> = Temperature measured in degrees centigrade

Table 2  
 Summary of Analytical Results  
 Fourth Quarter 1992  
 milligrams per liter (mg/l) or parts per million (ppm)

Shell Station: 2724 Castro Valley Boulevard  
 Castro Valley, California  
 WIC #: 204-1381-0407

Date: 11/27/92  
 Project Number: 067-68.01

Sample Designation	Water Sample Field Date	TPH-g	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-d	TPH-mo
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
MW-1	04/19/91	<0.05	0.0077	<0.0005	<0.0005	<0.0005	<0.05	NA
MW-1	07/16/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	<0.5
MW-1	10/08/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	<0.5
MW-1	08/26/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	0.051	NA
MW-1	11/12/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA
MW-2	04/19/91	3.9	0.10	0.077	0.100	0.093	0.36	NA
MW-2	07/16/91	1.8	0.100	0.0058	0.041	0.031	0.43	<0.5
MW-2	10/08/91	1.0	0.017	<0.0005	0.025	0.025	0.11	<0.5
MW-2	08/26/92	0.52	0.038	0.0020	0.012	0.0079	0.063*	NA
MW-2	11/12/92	0.31	0.030	0.0062	0.0051	0.0043	0.16	NA
MW-2D	08/26/92	0.45	0.033	0.0017	0.011	0.0034	0.063*	NA
MW-2D	11/12/92	0.36	0.031	0.0065	0.0051	0.0044	0.18	NA
MW-3	04/19/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA
MW-3	07/16/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	1.4
MW-3	10/08/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	<0.5
MW-3	08/26/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA
MW-3	11/12/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA

TPH-g = total petroleum hydrocarbons as gasoline

TPH-d = total petroleum hydrocarbons as diesel

TPH-mo = total petroleum hydrocarbons as motor oil

NA = Not analyzed

\* = Concentration reported as diesel is primarily due to the presence of a lighter petroleum product, possibly gasoline or kerosene

Table 2  
 Summary of Analytical Results  
 Fourth Quarter 1992  
 milligrams per liter (mg/l) or parts per million (ppm)

Shell Station: 2724 Castro Valley Boulevard  
 Castro Valley, California  
 WIC #: 204-1381-0407

Date: 11/27/92  
 Project Number: G67-68.01

Sample Designation	Water Sample Field Date	TPH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-d	TPH-mo
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
MW-5	04/19/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA
MW-5	07/16/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	<0.5
MW-5	10/08/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	<0.5
MW-5	08/26/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA
MW-5	11/12/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA
OMW-6	07/16/91	NR	NR	NR	NR	NR	NR	NR
OMW-6	10/08/91	NR	NR	NR	NR	NR	NR	NR
OMW-6	08/26/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA
OMW-6	11/12/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA
MW-7	07/16/91	NR	NR	NR	NR	NR	NR	NR
MW-7	10/08/91	NR	NR	NR	NR	NR	NR	NR
MW-7	08/26/92	0.063	0.0010	<0.0005	0.0026	<0.0005	<0.05	NA
MW-7	11/12/92	0.073	0.011	<0.0005	0.0037	<0.0005	<0.05	NA
OMW-8	07/16/91	NR	NR	NR	NR	NR	NR	NR
OMW-8	10/08/91	NR	NR	NR	NR	NR	NR	NR
OMW-8	08/26/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA
OMW-8	11/12/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA
FB	08/26/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA
FB	11/12/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA

TPH-g = total petroleum hydrocarbons as gasoline  
 TPH-d = total petroleum hydrocarbons as diesel  
 TPH-mo = total petroleum hydrocarbons as motor oil  
 NA = Not analyzed  
 NR = Not reported; data not available

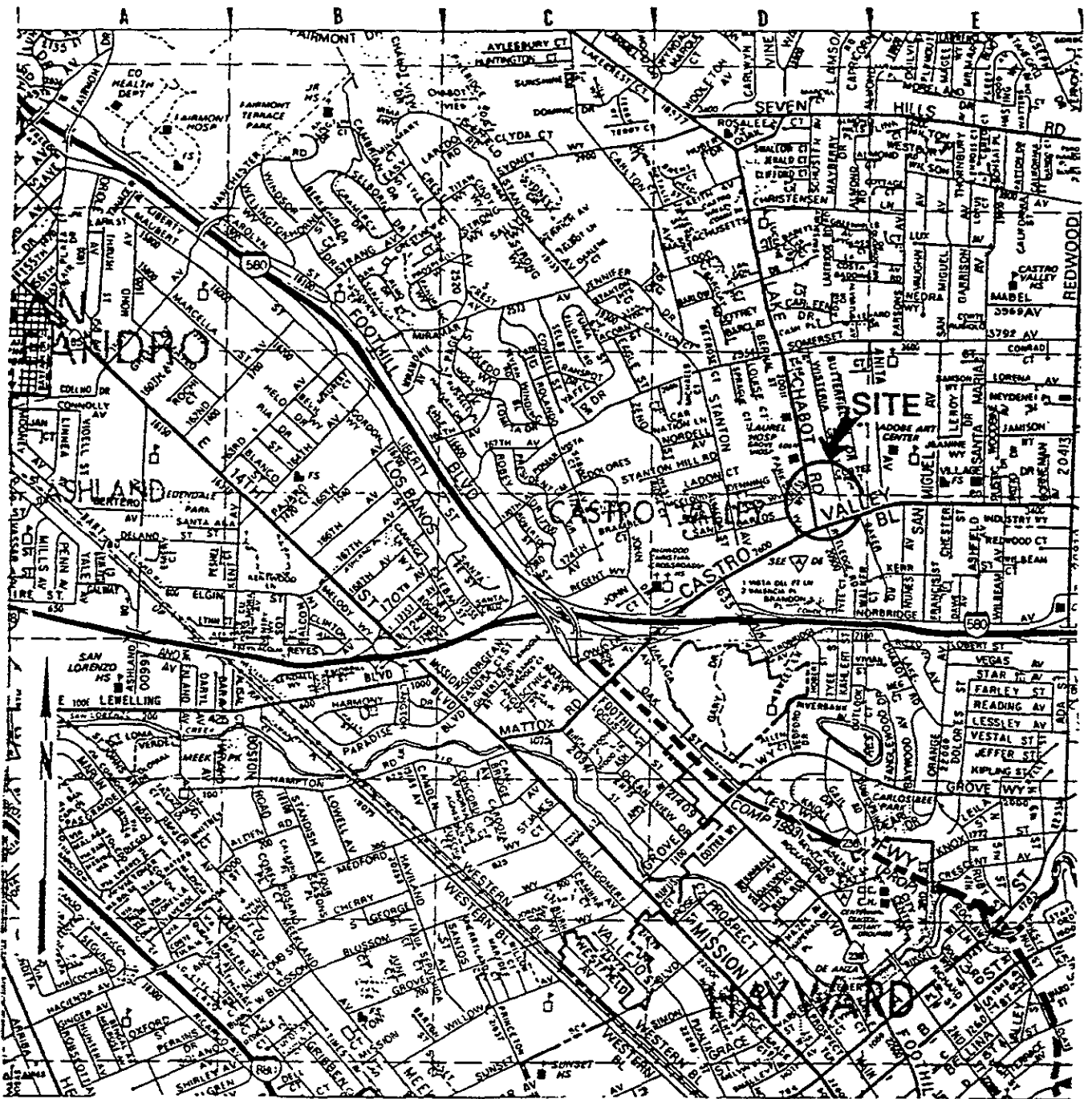
Table 2  
 Summary of Analytical Results  
 Fourth Quarter 1992  
 milligrams per liter (mg/l) or parts per million (ppm)

Shell Station: 2724 Castro Valley Boulevard  
 Castro Valley, California  
 WIC #: 204-1381-0407

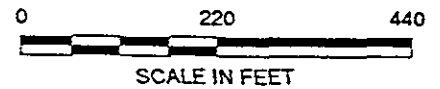
Date: 11/27/92  
 Project Number: G67-68.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)	TPH-d (mg/l)	TPH-mo (mg/l)
TB	08/26/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA
TB	11/12/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA

TPH-g = total petroleum hydrocarbons as gasoline  
 TPH-d = total petroleum hydrocarbons as diesel  
 TPH-mo = total petroleum hydrocarbons as motor oil  
 NA = Not analyzed



SOURCE: Thomas Brothers Maps, 1989.



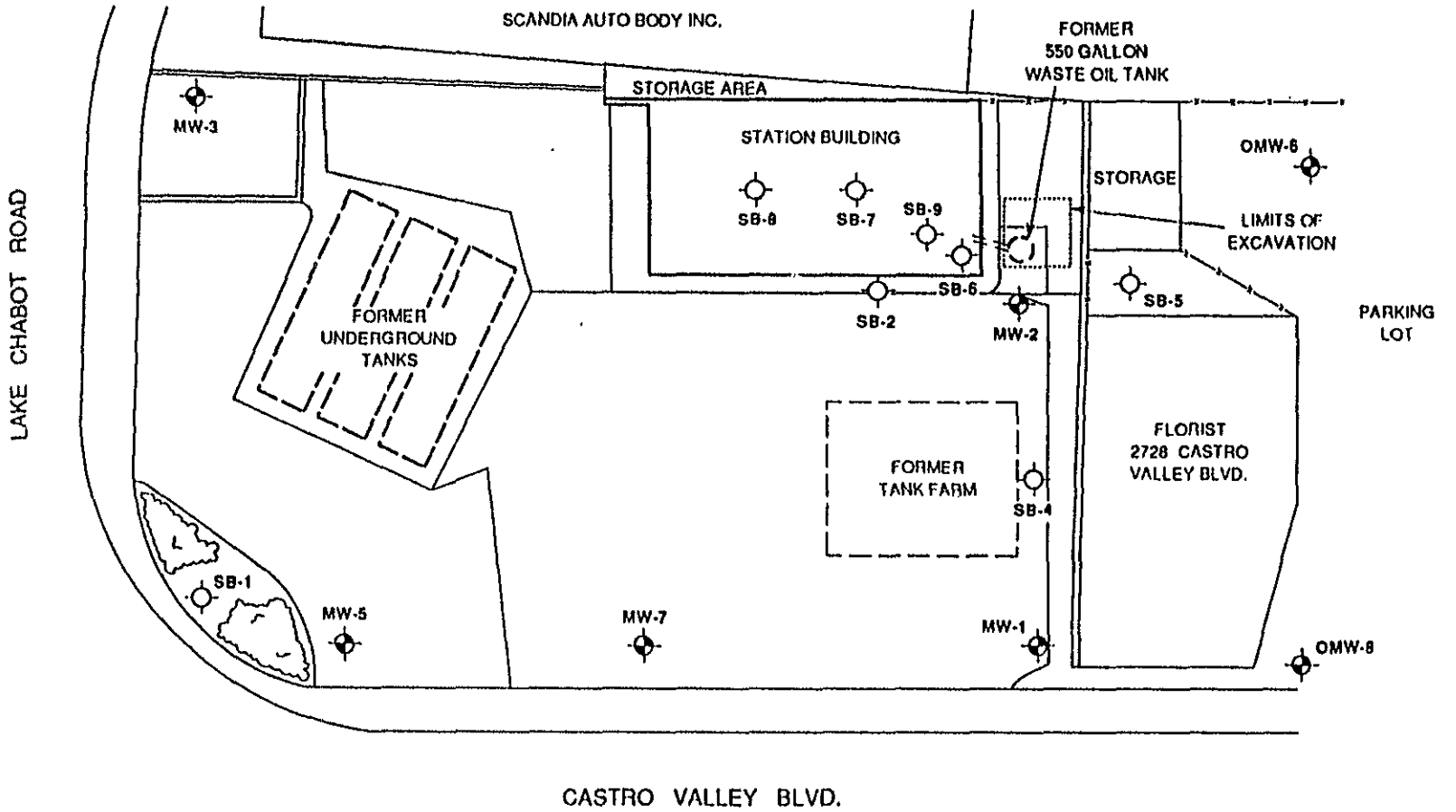
### SITE LOCATION MAP

SHELL OIL COMPANY  
2724 Castro Valley Boulevard  
Castro Valley, California

Scale	AS SHOWN	Project No.	89-44-380-20
Prepared by	LQL	Date	6/8/90
Checked by	MCC	Drawing No.	1
Approved by	CRC		



**Converse Environmental West**



**LEGEND**

- SB-1 SOIL BORING (locations approximate)
- MW-1 GROUNDWATER MONITORING WELL
- OMW-9 PROPOSED OFFSITE GROUNDWATER MONITORING WELL.

Base Map: Surveyed with electronic distance meter by CEW, 1990.

**PLOT PLAN**

SHELL OIL COMPANY  
2724 Castro Valley Boulevard  
Castro Valley, California

Scale	AS SHOWN	Project No.	88-44-380-20
Prepared by	LQL	Date	10/24/91
Checked by	DS	Drawing No.	2
WIC Number	204 1381-0407		



**Converse Environmental West**



MR. DAVID LARSEN  
EMCON ASSOCIATES  
1938 JUNCTION AVE.  
SAN JOSE, CA 95131

Workorder # : 9211187  
Date Received : 11/12/92  
Project ID : 204-1381-0407  
Purchase Order: MOH-B813

The following samples were received at Anamatrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9211187- 1	OMW-6
9211187- 2	OMW-8
9211187- 3	MW-1
9211187- 4	MW-3
9211187- 5	MW-5
9211187- 6	MW-2
9211187- 7	MW-7
9211187- 8	MW-2D
9211187- 9	TB
9211187-10	FB

This report consists of 9 pages not including the cover letter, and is organized in sections according to the specific Anamatrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anamatrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anamatrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anamatrix.

  
\_\_\_\_\_  
Sarah Schoen, Ph.D.  
Laboratory Director

11-23-92  
\_\_\_\_\_  
Date

**EMCON ASSOCIATES**

**NOV 24 1992**

**RECEIVED**

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MR. DAVID LARSEN  
EMCON ASSOCIATES  
1938 JUNCTION AVE.  
SAN JOSE, CA 95131

Workorder # : 9211187  
Date Received : 11/12/92  
Project ID : 204-1381-0407  
Purchase Order: MOH-B813  
Department : GC  
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9211187- 1	OMW-6	WATER	11/12/92	TPHd
9211187- 2	OMW-8	WATER	11/12/92	TPHd
9211187- 3	MW-1	WATER	11/12/92	TPHd
9211187- 4	MW-3	WATER	11/12/92	TPHd
9211187- 5	MW-5	WATER	11/12/92	TPHd
9211187- 6	MW-2	WATER	11/12/92	TPHd
9211187- 7	MW-7	WATER	11/12/92	TPHd
9211187- 8	MW-2D	WATER	11/12/92	TPHd
9211187- 9	TB	WATER	11/12/92	TPHd
9211187-10	FB	WATER	11/12/92	TPHd
9211187- 1	OMW-6	WATER	11/12/92	TPHg/BTEX
9211187- 2	OMW-8	WATER	11/12/92	TPHg/BTEX
9211187- 3	MW-1	WATER	11/12/92	TPHg/BTEX
9211187- 4	MW-3	WATER	11/12/92	TPHg/BTEX
9211187- 5	MW-5	WATER	11/12/92	TPHg/BTEX
9211187- 6	MW-2	WATER	11/12/92	TPHg/BTEX
9211187- 7	MW-7	WATER	11/12/92	TPHg/BTEX
9211187- 8	MW-2D	WATER	11/12/92	TPHg/BTEX
9211187- 9	TB	WATER	11/12/92	TPHg/BTEX
9211187-10	FB	WATER	11/12/92	TPHg/BTEX



REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MR. DAVID LARSEN  
EMCON ASSOCIATES  
1938 JUNCTION AVE.  
SAN JOSE, CA 95131

Workorder # : 9211187  
Date Received : 11/12/92  
Project ID : 204-1381-0407  
Purchase Order: MOH-B813  
Department : GC  
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheerl Balmer 11/20/92  
Department Supervisor Date

Steve Jones 11/23/92  
Chemist Date



ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS  
(GASOLINE WITH BTEX)  
ANAMETRIX, INC. - (408) 432-8192

Anamatrix W.O.: 9211187  
Matrix : WATER  
Date Sampled : 11/12/92

Project Number : 204-1381-0407  
Date Released : 11/20/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# MW-2	Sample I.D.# MW-7	Sample I.D.# MW-2D	Sample I.D.# TB	Sample I.D.# FB
Benzene	0.0005	0.030	0.011	0.031	ND	ND
Toluene	0.0005	0.0062	ND	0.0065	ND	ND
Ethylbenzene	0.0005	0.0051	0.0037	0.0051	ND	ND
Total Xylenes	0.0005	0.0043	ND	0.0044	ND	ND
TPH as Gasoline	0.050	0.31	0.073	0.36	ND	ND
% Surrogate Recovery		93%	99%	93%	70%	67%
Instrument I.D.		HP21	HP21	HP21	HP21	HP21
Date Analyzed		11/18/92	11/18/92	11/18/92	11/16/92	11/16/92
RLMF		2	1	2	1	1

- ND - Not detected at or above the practical quantitation limit for the method.
- TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
- BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
- RLMF - Reporting Limit Multiplication Factor.

Anamatrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Steve Amos                      11/23/92  
Analyst                                      Date

Cheryl Balmer                      11/20/92  
Supervisor                                      Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS  
(GASOLINE WITH BTEX)  
ANAMETRIX, INC. - (408) 432-8192

Anamatrix W.O.: 9211187  
Matrix : WATER  
Date Sampled : N/A

Project Number : 204-1381-0407  
Date Released : 11/20/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# BN1601E3	Sample I.D.# BN1701E3	Sample I.D.# BN1801E3
		BLANK	BLANK	BLANK
Benzene	0.0005	ND	ND	ND
Toluene	0.0005	ND	ND	ND
Ethylbenzene	0.0005	ND	ND	ND
Total Xylenes	0.0005	ND	ND	ND
TPH as Gasoline	0.050	ND	ND	ND
% Surrogate Recovery		120%	82%	94%
Instrument I.D.		HP21	HP21	HP21
Date Analyzed		11/16/92	11/17/92	11/18/92
RLMF		1	1	1

- ND - Not detected at or above the practical quantitation limit for the method.
- TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
- BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
- RLMF - Reporting Limit Multiplication Factor.

Anamatrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Steve Poma 11/23/92  
Analyst Date

Cheyl Balmer 11/20/92  
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9211187  
 Matrix : WATER  
 Date Sampled : 11/12/92  
 Date Extracted: 11/16-17/92

Project Number : 204-1381-0407  
 Date Released : 11/20/92  
 Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/L)	Amount Found (mg/L)
9211187-01	OMW-6	11/17/92	0.050	ND
9211187-02	OMW-8	11/17/92	0.050	ND
9211187-03	MW-1	11/17/92	0.050	ND
9211187-04	MW-3	11/17/92	0.050	ND
9211187-05	MW-5	11/17/92	0.050	ND
9211187-06	MW-2	11/17/92	0.050	0.16
9211187-07	MW-7	11/17/92	0.050	ND
9211187-08	MW-2D	11/17/92	0.050	0.18
9211187-09	TB	11/17/92	0.050	ND
9211187-10	FB	11/17/92	0.050	ND
DWBL111692	METHOD BLANK	11/16/92	0.050	ND
DWBL111792	METHOD BLANK	11/17/92	0.050	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 0.050 mg/L.

ND - Not detected at or above the practical quantitation limit for the method.

TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Steve Pons                      11/23/92  
 Analyst                                      Date

Cheryl Bauman                      11/23/92  
 Supervisor                                      Date

BTEX LABORATORY CONTROL SAMPLE REPORT  
 EPA METHOD 5030 WITH GC/PID  
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE	Anamatrix I.D.: LCSW1116
Matrix : WATER	Analyst : <i>JP</i>
Date Sampled : N/A	Supervisor : <i>JB</i>
Date Analyzed : 11/16/92	Date Released : 11/19/92
	Instrument ID : HP21

COMPOUND	SPIKE AMT. (mg/L)	LCS (mg/L)	REC LCS	%REC LIMITS
Benzene	0.010	0.010	100%	49-159
Toluene	0.010	0.011	110%	53-156
Ethylbenzene	0.010	0.011	110%	54-151
TOTAL Xylenes	0.010	0.012	120%	56-157
P-BFB			96%	53-147

\* Limits established by Anamatrix, Inc.

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT  
 EPA METHOD 3510 WITH GC/FID  
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE  
 Matrix : WATER  
 Date Sampled : N/A  
 Date Extracted: 11/16/92  
 Date Analyzed : 11/17/92

Anamatrix I.D. : LCSW1116  
 Analyst : *J*  
 Supervisor : *CC*  
 Date Released : 11/20/92  
 Instrument I.D.: HP23

COMPOUND	SPIKE AMT (mg/L)	LCS REC (mg/L)	% REC LCS	LCSD REC (mg/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1.25	0.91	73%	1.00	80%	9%	63-130

\*Quality control established by Anamatrix, Inc.

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT  
 EPA METHOD 3510 WITH GC/FID  
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE  
 Matrix : WATER  
 Date Sampled : N/A  
 Date Extracted: 11/17/92  
 Date Analyzed : 11/17/92

Anamatrix I.D. : LCSW1117  
 Analyst : /s/  
 Supervisor :  
 Date Released : 11/20/92  
 Instrument I.D.: HP23

COMPOUND	SPIKE AMT (mg/L)	LCS REC (mg/L)	% REC LCS	LCSD REC (mg/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1.25	1.20	96%	1.20	96%	0%	63-130

\*Quality control established by Anamatrix, Inc.





**SHELL OIL COMPANY**  
**RETAIL ENVIRONMENTAL ENGINEERING - WEST**

**CHAIN OF CUSTODY RECORD**

Serial No: \_\_\_\_\_

Date: 11-12-92

Page 1 of 2

4211187 (18) (10/24) 15:35<sup>WB</sup>

Site Address: 2724 Castro Valley Blvd  
 Castro Valley, CA

WIC#: 204-1381-0407

Shell Engineer: Paul Hayes Phone No.: (510) \_\_\_\_\_  
 Fax #: 675-6669

Consultant Name & Address: 1938 Junction Avenue  
 EMCON Associates San Jose, CA 95131

Consultant Contact: David Larsen Phone No.: (408) \_\_\_\_\_  
 Fax #: 453-2269

Comments: 3-VOLATILES for gas, BTEX  
 2-Liter Glass (SLR) for diesel

Sampled by: Kevin Reichelderfer

Printed Name: KEVIN REICHELDERFER

**Analysis Required**

LAB: AnametriX

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020 <i>gasoline</i>	Asbestos	Container Size	Preparation Used	Composite Y/N
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CHECK ONE (1) BOX ONLY	CI/DI	TURN AROUND TIME
Quarterly Monitoring <input checked="" type="checkbox"/>	6441	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	6441	48 hours <input type="checkbox"/>
Soil Classfy/Disposal <input type="checkbox"/>	6442	15 days <input checked="" type="checkbox"/> (Normal)
Water Classfy/Disposal <input type="checkbox"/>	6443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/>	6452	
Water Rem. or Sys. O & M <input type="checkbox"/>	6453	
Other <input type="checkbox"/>		

NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.

MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
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Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020 <i>gasoline</i>	Asbestos	Container Size	Preparation Used	Composite Y/N
1 OMW-6	11-12-92			X		5		X				X		40 ml	HC	No
2 OMW-8				X		5		X				X				
3 MW-1				X		5		X				X				
4 MW-3				X		5		X				X				
5 MW-5				X		5		X				X				
6 MW-2				X		5		X				X				
7 MW-7				X		5		X				X				
8 MW-2D				X		5		X				X				

Relinquished By (signature): <i>Kevin Reichelderfer</i>	Printed Name: KEVIN REICHELDERFER	Date: 11-12-92 Time: 1500	Received (signature): <i>Maria Barajas</i>	Printed Name: Maria Barajas	Date: 11/12/92 Time: 15:00
Relinquished By (signature):	Printed Name:	Date:	Received (signature):	Printed Name:	Date:
Relinquished By (signature):	Printed Name:	Date:	Received (signature):	Printed Name:	Date:

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

1  
2  
3  
4  
5  
6  
7  
8

