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December 27, 1991  
88-44-359-20-1490  
WIC No. 204-5508-5504

Mr. Thomas Callahan  
San Francisco Bay Regional Water  
Quality Control Board  
2101 Webster Street, Suite 500  
Oakland, California 94612

Subject: Report of Activities, Quarter 4, 1991  
Shell Retail Gas Station  
285 Hegenberger Road  
Oakland, California

*Give To  
APCC.*

Dear Mr. Callahan:

This letter presents the results of investigations conducted by Converse Environmental West (Converse) during Quarter 4, 1991, at the above Shell retail gas station (Drawing 1) for Shell Oil Company. Descriptions of site location, conditions, soil stratigraphy, soil borings, and well installations have been included in previous quarterly reports on file with the regulatory agencies of jurisdiction.

Quarter 4, 1991 investigations consisted of monitoring the physical conditions of groundwater (depth to water, depth to product, thickness of floating product, if present, etc.), and collecting groundwater samples from 10 on-site monitoring wells (Drawing 2).

The observed concentrations of dissolved total petroleum hydrocarbons as gasoline (TPH-g) in monitoring well MW-3 increased from 0.43 milligrams per liter (mg/L) to 0.77 mg/L and in MW-6 from 5 mg/L to 11 mg/L from July 1991 to October 1991. The concentrations of TPH-g in MW-2, MW-5, MW-7 and MW-9 decreased from 8.1 mg/L to 1.4 mg/L, 24 mg/L to 2.8 mg/L, 79 mg/L to 55 mg/L and 41 mg/L to 20 mg/L, respectively over the same time period. Additionally, over the same time period, the observed concentration of other dissolved hydrocarbons underwent similar fluctuations. The analytical data is presented in Table 1.

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The depth-to-groundwater measurements indicate that the groundwater elevations have dropped 0.29 to 1.06 feet since the measurements taken last quarter. This decrease follows the pattern of fluctuating groundwater elevations at this site; groundwater elevations increase generally in the winter and spring (wet) months, and decrease in the summer and fall.

Work conducted is consistent with the Tri-Regional Water Quality Control Board guidelines for underground storage tanks. Sampling methods, chain-of-custody protocols, and recommended analytical methods have been included in previous quarterly reports and are on file with the regulatory agencies.


If you have any questions, please call me at (415) 543-4200.

Very truly yours,

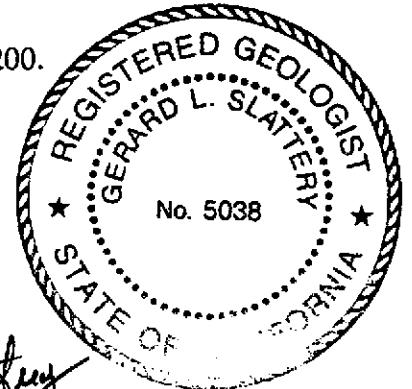
**Converse Environmental West**



Peter A. Fuller  
Project Manager

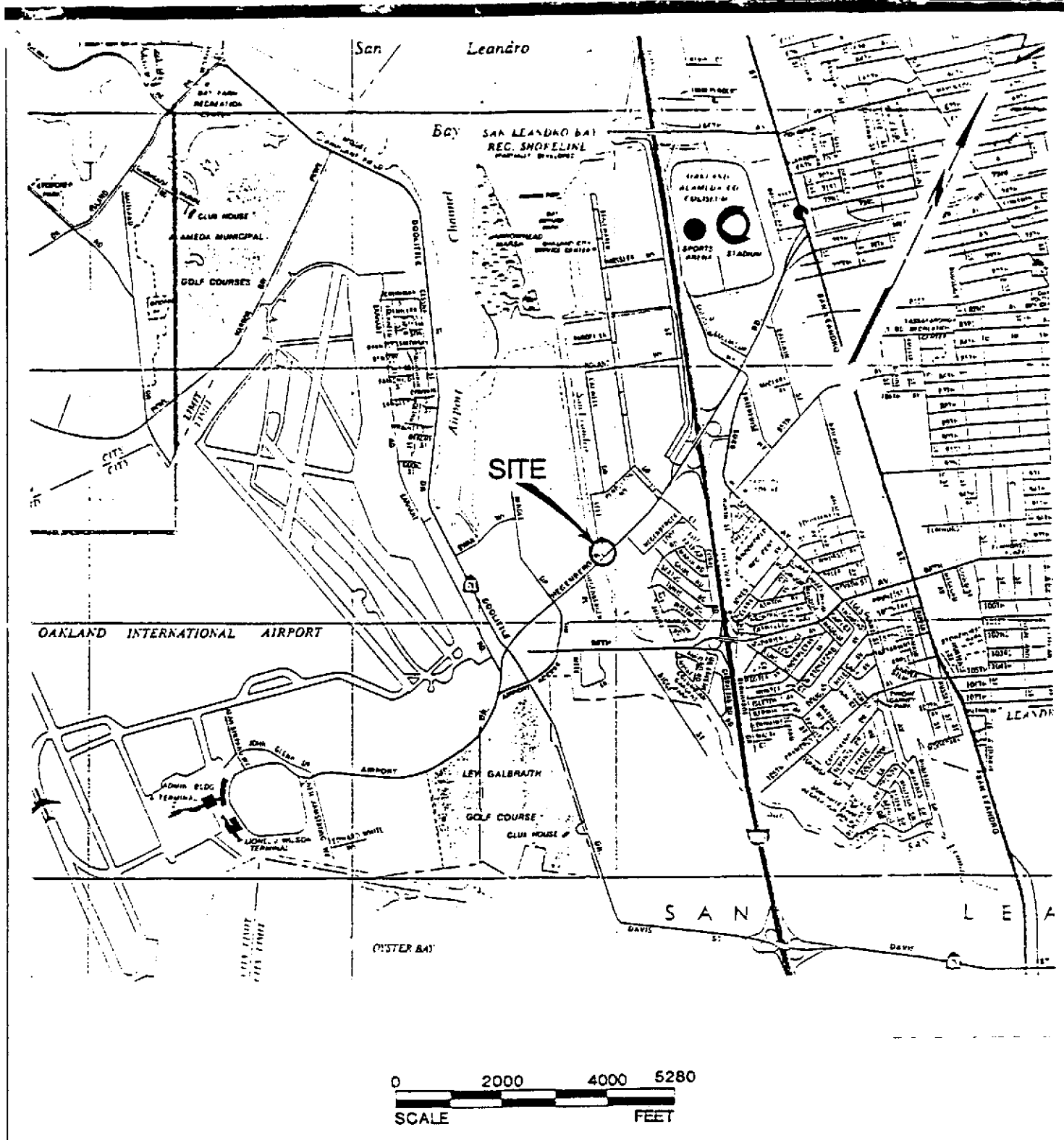


Gerard L. Slattery, EG 5038  
Senior Geologist  
Manager, Technical Services



cc: Mr. Rafat Shahid - Alameda County Health Care Services Agency  
Mr. Paul Hayes - Shell Oil Company  
Mr. Peck King - Rollins Leasing Corporation  
Mr. Peterson - Peterson Properties  
Mr. Thomas Clark - Port of Oakland

Attachments: Certification  
Drawing 1 - Site Location  
Drawing 2 - Site Plot Plan  
Drawing 3 - Groundwater Contour Map  
Table 1 - Results of Groundwater Chemical Analyses  
Table 2- Groundwater Monitoring Well Information  
Table 3 - Chronological Summary  
Laboratory Reports and Chain-of-Custody Forms



SOURCE: California State Automobile Association

WIC No. 204-5506-5504

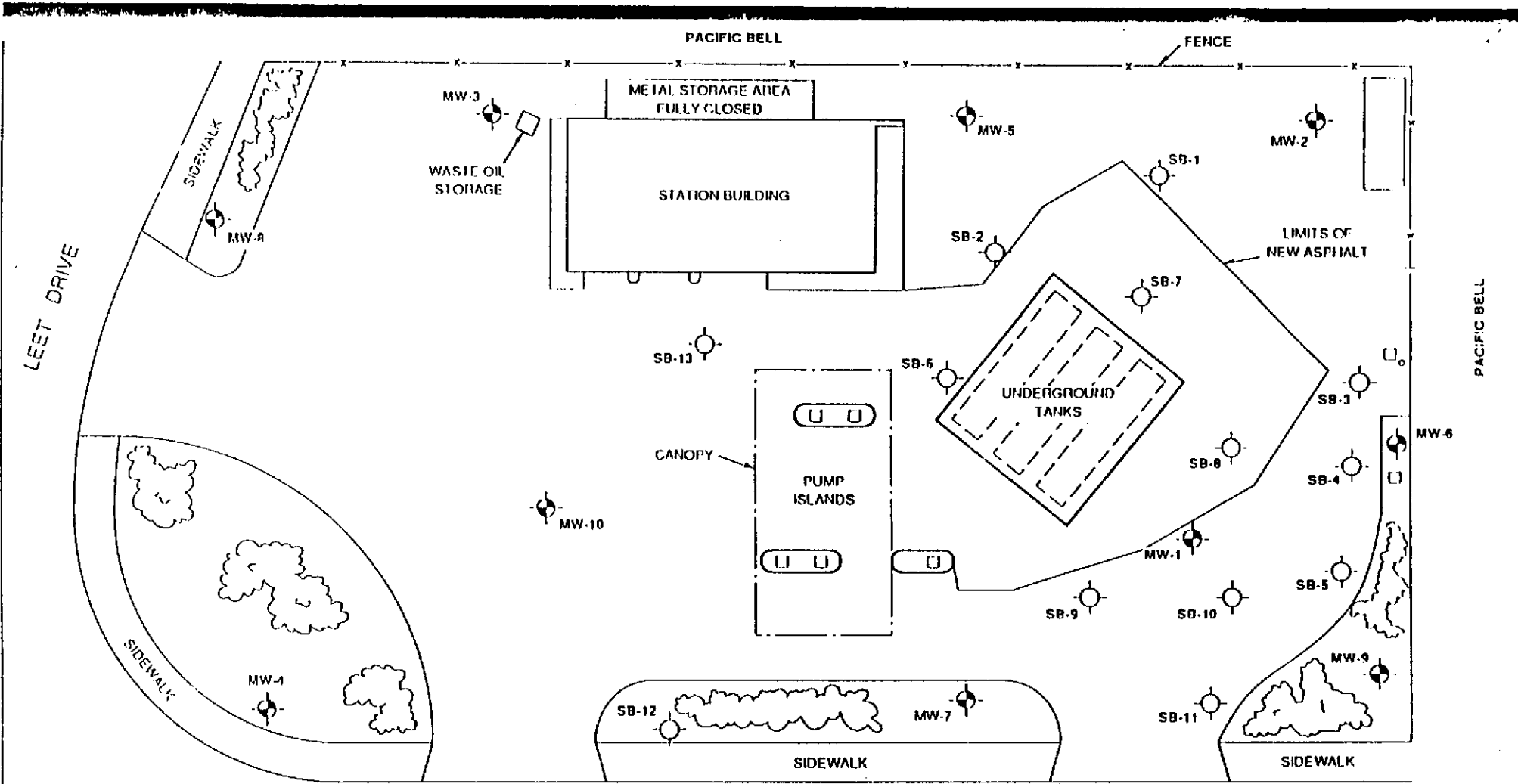
### SITE LOCATION

SHELL OIL COMPANY  
 285 Hegenberger Road  
 Oakland, California

Scale	AS SHOWN	Project No.	85-44-359-20
Prepared by	LCL	Date	3/28/80
Checked by	RMB	Drawing No.	1
Approved by	CRC		





Converse Environmental West



HEGENBERGER ROAD



**LEGEND**

- SB-1  SOIL BORING (locations approximate)
- MW-1  GROUNDWATER MONITORING WELL

Base Map: Surveyed with Electronic Distance Meter by CEW, 1989.

**PLOT PLAN**

SHELL OIL COMPANY  
285 Hegenberger Road  
Oakland, California

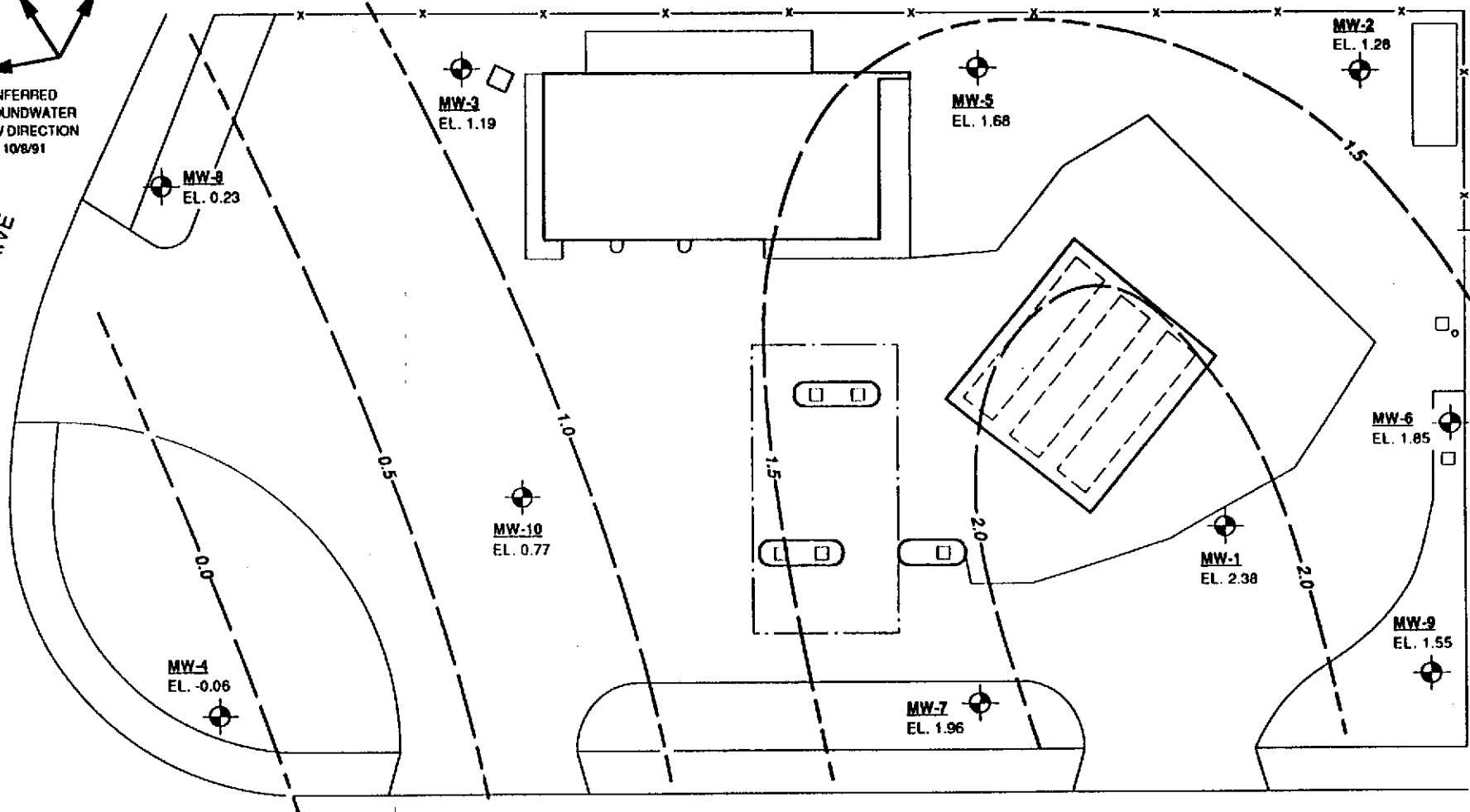
Scale	AS SHOWN	Project No.	88-44-359-20
Prepared by	CRB	Date	3/18/91
Approved by	CRC	Drawing No.	2
W/C No.	204-5508-5504		



**Converse Environmental West**

INFERRED  
GROUNDWATER  
FLOW DIRECTION  
10/8/91

LEET DRIVE



**LEGEND**

— GROUNDWATER CONTOUR (long dash where approximate, short dash where inferred)

MW-1 GROUNDWATER MONITORING WELL SHOWING GROUNDWATER ELEVATION

NOTES: Groundwater elevations in feet above mean sea level.

HEGENBERGER ROAD



Base Map: Surveyed with Electronic Distance Meter by CEW, 1989.

**GROUNDWATER CONTOUR MAP Q4/91**

SHELL OIL COMPANY  
285 Hegenberger Road  
Oakland, California

Scale	AS SHOWN	Project No.	88-44-359-20
Prepared by	LQL	Date	11/12/91
Approved by	PAF	Drawing No.	3
WIC No.	204-5508-5504		



**Converse Environmental West**

TABLE 1. RESULTS OF GROUNDWATER CHEMICAL ANALYSES

Shell Oil Company Facility  
 285 Hegenberger Road  
 Oakland, California

Concentration (mg/L) *ppm*

Well No.	Date Sampled	TPH-g	TPH-d	Benzene	Toluene	Ethyl-Benzene	Xylenes
MW-1	02/16/89	99.0	NA	20	23	5.7	23
MW-1	05/23/89	48.0	11.0	4.2	5.2	1.2	7.7
MW-1	08/04/89	63.0	11.0	5.5	5.5	3.2	9.5
MW-1	12/15/89	30.0	11.0	<0.005	<0.0005	<0.0005	<0.0005
MW-1	02/07/90	93.0	10.0	13.0	9.6	2.4	14.0
MW-1	04/18/90	55.0	8.7	14.0	8.4	3.2	13.0
MW-1	07/24/90	73.0	3.6	16.0	7.40	2.80	15.0
MW-1 <sup>2</sup>	07/24/90	57.0	3.6	18.0	8.0	3.0	16.0
MW-1	10/01/90	45.0	1.7	8.0	4.3	2.0	11.0
MW-1	01/03/91	43.0	3.10	10.0	3.40	1.90	11.0
MW-1	04/10/91	67.0	1.8	20.0	9.60	3.50	16.0
MW-1	07/12/91	NS	NS	NS	NS	NS	NS
MW-1	10/08/91	55	7.4 <sup>3</sup>	18	3.5	2.3	8.6
MW-2	02/16/89	20.0	NA	0.2	0.9	2.7	9.6
MW-2	05/23/89	1.5	1.6	0.0043	0.0029	0.011	0.15
MW-2	08/04/89	15.0	7.4	0.075	0.12	0.85	2.2
MW-2	12/15/89	5.0	2.6	0.052	0.013	0.0041	0.29
MW-2	02/07/90	13.0	4.8	0.032	0.034	0.23	0.640
MW-2	04/18/90	9.8	3.2	0.033	0.019	0.46	1.7
MW-2	07/24/90	9.6	2.7	0.041	0.027	0.540	0.940
MW-2	10/01/90	0.39	1.6	0.0034	0.015	0.0085	0.025
MW-2	01/03/91	1.8	0.83	0.056	0.0044	0.0048	0.092
MW-2	04/10/91	1.9	0.28	<0.0005	0.028	0.140	0.490
MW-2	07/12/91	8.1	1.1	0.089	0.066	0.350	0.930
MW-2	10/08/91	1.4	2.6	0.0051	0.0015	0.036	0.270
MW-3	02/16/89	60.0	NA	5.5	0.2	3.2	5.2
MW-3	05/23/89	<0.05	1.5	<0.0005	<0.0005	<0.0015	<0.0015
MW-3	08/04/89	2.0	1.2	0.12	0.012	<0.0015	0.086
MW-3	12/15/89	5.2	1.7	0.38	0.047	0.017	0.410
MW-3	03/08/90	0.26	0.23	0.017	<0.0005	0.0054	0.0025
MW-3	04/19/90	0.26	<0.05	<0.0005	<0.0005	<0.0005	0.0094
MW-3	07/24/90	0.51	0.21	0.046	0.0012	<0.0005	0.0093
MW-3	09/28/90	0.46	0.35	0.0063	0.0017	<0.0005	0.015
MW-3	01/03/91	4.8	0.63	0.920	0.0088	<0.0005	0.190
MW-3	04/10/91	0.12	0.06	0.0012	0.0008	0.0035	0.021
MW-3	07/12/91	0.43	<0.05	0.012	<0.0005	<0.0005	0.0077
MW-3	10/08/91	0.77	0.56	0.140	0.0007	<0.0005	0.053

*S.1ppb*

*140 ppm*

TABLE 1 (cont'd). RESULTS OF GROUNDWATER CHEMICAL ANALYSES

Shell Oil Company Facility  
285 Hegenberger Road  
Oakland, California

Well No.	Date Sampled	Concentration (mg/L)					
		TPH-g	TPH-d	Benzene	Toluene	Ethyl-Benzene	Xylenes
MW-4	05/23/89	<0.05	NA	<0.0005	<0.0005	<0.0015	<0.0015
MW-4*	08/04/89	<0.05	<0.05	<0.0005	<0.0005	<0.0015	<0.0015
MW-4	12/15/89	<0.05	0.09	<0.0005	<0.0005	<0.0005	<0.0005
MW-4 <sup>1</sup>	03/08/90	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
MW-4	07/25/90	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
MW-4	09/28/90	<0.05	NA	<0.0005	<0.0005	<0.0005	<0.0005
MW-4	01/03/91	<0.05	NA	<0.0005	<0.0005	<0.0005	<0.0005
MW-4	04/10/91	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
MW-4	07/12/91	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
MW-4	10/08/91	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
MW-5	05/23/89	26.0	7.0	1.5	0.28	<0.0015	8.1
MW-5	08/04/89	12.0	8.7	0.86	0.094	<0.0015	2.6
MW-5	12/15/89	1.00	0.71	0.022	0.035	0.018	0.044
MW-5	02/08/90	<0.05	0.62	0.0008	<0.0005	<0.0005	<0.0005
MW-5	04/19/90	19.0	5.0	4.5	0.85	0.097	8.0
MW-5	07/24/90	23.0	2.7	3.6	0.400	0.160	6.50
MW-5	09/28/90	5.4	0.55	1.40	0.026	0.013	1.30
MW-5	01/03/91	0.86	0.56	0.280	0.0028	0.0008	0.045
MW-5	04/10/91	12	1.8	0.710	0.130	0.500	2.4
MW-5	07/12/91	24	1.7	2.2	0.280	0.430	5.7
MW-5	10/08/91	2.8	1.4	0.860	0.013	<0.005	0.580
MW-6	05/23/89	22.0	7.0	0.016	0.0065	0.0066	3.4
MW-6	08/04/89	28.0	8.8	1.2	0.13	2.1	2.8
MW-6	12/15/89	16.0	5.5	0.37	0.092	0.20	0.18
MW-6	02/07/90	22.0	2.6	0.52	0.085	0.63	0.77
MW-6	04/18/90	21.0	5.7	0.9	0.077	2.7	2.7
MW-6	07/24/90	24.0	3.0	1.00	0.094	3.40	2.70
MW-6	10/01/90	22.0	<0.05	0.70	0.093	2.50	2.40
MW-6	01/03/91	25.0	0.96	1.00	0.088	2.60	3.70
MW-6	04/10/91	18	0.92	0.560	0.190	0.480	0.830
MW-6	07/12/91	9.5	1.9	0.670	0.051	1.1	0.920
MW-6	10/08/91	11	5.1 <sup>3</sup>	1.00	0.043	<0.005	<0.005
MW-7	05/23/89	47.0	11	3.5	5.0	1.5	7.8
MW-7	08/04/89	68.0	22	6.2	6.6	3.6	8.8
MW-7	12/15/89	100.0	12	4.5	5.3	1.3	5.3
MW-7	02/08/90	96.0	8.1	15.0	15.0	2.5	14.0
MW-7	04/19/90	94.0	10.0	25.0	13.0	3.3	13.0
MW-7	07/24/90	84.0	3.8	26.0	13.0	3.0	12.0
MW-7	09/28/90	43.0	<0.05	25.0	6.10	2.40	9.0
MW-7	01/03/91	78.0	3.10	26.0	16.0	3.0	14.0
MW-7 <sup>2</sup>	01/03/91	77.0	3.60	29.0	19.0	3.0	15.0
MW-7	04/10/91	140	1.8	26.0	16.0	2.20	14.0
MW-7	07/12/91	79	1.1	7.7	7.2	2.3	10.0
MW-7	10/08/91	55	0.39 <sup>3</sup>	29.0	7.5	1.8	9.3