Shell Oil Company

San Francisco District

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December 28, 1990
88-44-380-20-987

Ms. Penny Silzer
San Francisco Bay Regional
Water Quality Control Board
1800 Harrison Street, Room 700
Oakland, California 94612

Subject: Shell Oil Company - Quarterly Report - Q4/1990
Former Shell Oil Company Site
2724 Castro Valley Boulevard
Castro Valley, California

Dear Ms. Silzer:

Enclosed please find one copy of the Shell Oil Company Quarterly Report of Activities Quarter 4, 1990, prepared by Converse Environmental West (CEW) for the Shell Oil Company (Shell) Site (site) located at 2724 Castro Valley Boulevard in Castro Valley, California.

Please call if you have any questions.

Very truly yours,

Shell Oil Company

Jack P. Brastad

Enclosure

cc: Mr. Lawrence Seto - Alameda County Health Care Services Agency
Mr. Jack P. Brastad - Shell Oil Company

2724 CASTRO 2\SILZER.987

REPORT OF ACTIVITIES
QUARTER 4, 1990

SHELL OIL COMPANY SITE
2724 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA

Prepared for:

Shell Oil Company
1390 Willow Pass Road, Suite 900
Concord, California 94520

Prepared by:

Converse Environmental West
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San Francisco, California 94015

December 28, 1990

CEW Project No. 88-44-380-20

TABLE OF CONTENTS

TABLE OF CONTENTS (cont'd)

LIST OF TABLES

LIST OF DRAWINGS

SECTION 1

INTRODUCTION

1.1 BACKGROUND AND OBJECTIVES

This report presents the results of investigative activities conducted by Converse Environmental West (CEW) during Quarter 4, 1990 (Q4/90) for the former Shell Oil Company (Shell) station (site) located at 2724 Castro Valley Blvd, Castro Valley, California (Drawing 1). This report is prepared to fulfill the quarterly reporting requirements as specified in the Work Plan prepared by CEW and dated January 16, 1990 for achievement of environmental closure of the site. The Work Plan is on file with the regulatory agencies of jurisdiction.

This former retail gasoline station is located on the northeast corner of Castro Valley Blvd and Lake Chabot Road in Castro Valley, California. The site is approximately 160 feet long by 100 feet wide (Drawing 2). Commercial businesses exist on all corners of the intersection. Surrounding neighborhood development is commercial along both roads. Single family houses or residences are located on nearby side streets. The site was an active service station prior to 1989, but is now temporarily closed due to ongoing renovation work, tank replacement, and environmental remediation.

Topographically, the site is located on the western edge of a gentle valley (Castro Valley) on Recent alluvial fill. The terrain rises northward into the San Leandro Hills and the site is approximately 50 feet above the valley floor. An isolated hillside knob with 60 to 100 feet of relief exists 600 feet south of the site. An intermittent stream is shown 300 feet west on the 7 1/2 minute Hayward, California USGS topographic map. This stream enters San Lorenzo Creek approximately one mile south of the site.

During the past four years Shell and its environmental consultants Blaine Technical Services, Woodward-Clyde Consultants, Crosby and Overton, and Converse Environmental West (CEW) have investigated the extent of soil contamination associated with underground storage tanks and product lines at the site. Environmental investigation was initiated in November, 1986, when Shell replaced the waste oil tank and discovered minor soil contamination in tank backfill.

In March, 1989, Shell removed the underground gasoline storage tanks and discovered subjacent soil contamination. The contaminated soil was removed in three successive stages.

During June 1989, soil around the former storage tanks was excavated to a depth of 12 feet, the approximate depth of the water table (Excavation I, Drawing 2). In July 1989, Excavation I was extended from the existing building on the north, to the sidewalk of Castro Valley Boulevard on the South. The spoils from the excavation were removed from the site, by Crosby and Overton, a licensed hazardous waste transporter and disposed of at a Class I landfill at Buttonwillow, California. Verification samples collected from the excavation sidewalls indicated the absence of petroleum hydrocarbons in the exposed soils, except at the northeast corner, where further excavation was impractical due to obstruction from buildings and underground utilities. Mr. Larry Seto of ACHCSA was notified of the sample results in letters dated July 11 and July 27, 1989, and the excavation was backfilled soon thereafter (Drawing 2).

In late August, 1989, exploratory test pits were excavated under the drive pad area, to determine the extent of suspected contamination in shallow soil near the former pump islands. Local areas of contaminated soil were discovered between the pump islands. In early October 1989, the test pits were expanded into Excavation II (Drawing 2), and contaminated soil was removed. Soil samples were taken from the sidewalls and bottom of the excavation, and the excavation was expanded slightly where residual soil contamination was present.

Final verification samples collected in January 1990 showed that the exposed soils did not contain detectable levels of petroleum hydrocarbons. Three samples taken in the deepest portion of the excavation (#16, SW-22, SW-23) showed some contamination. These samples were all taken in the capillary or saturated zone.

A letter was sent to ACHCSA dated May 31, 1990 describing these sampling results, and requesting permission to backfill the excavation and fully restore the site. Excavation II was backfilled on July 10, 1990.

On May 9, 1990 hand-auger boring SB-2 was drilled at an angle under the building foundation, 20 feet to the west of MW-2 (Drawing 2). Two soil samples were taken at depths of 4.5 and 6.5 feet below the building, and analyzed for all waste oil parameters.

1.2 SCOPE OF ACTIVITIES

The investigative activities conducted during Q4/90 were authorized under an existing purchase order and blanket number from Shell for environmental services at the site. The work completed during Q4/90 consisted of the following activities:

- Sampling monitoring wells MW-1, MW-2, MW-3 and MW-5, and analyzing for benzene, toluene, ethylbenzene, xylenes (BTEX), total petroleum hydrocarbons as gasoline (TPH-g) or diesel (TPH-d), purgeable halocarbons by EPA Method 601 and purgeable aromatics by EPA Method 602.

- Pursuing right of entry to the adjoining property on the east for installation of wells and soil borings (described in the Site Restoration Plan dated May 31, 1990).

SECTION 2

WORK COMPLETED THIS QUARTER

Work initiated and completed during Q4/90 followed the task descriptions of the Work Plan dated January 16, 1990, and the CEW protocols on file with the regulatory agencies of jurisdiction. Modifications and additions to the Work Plan are contained in a Site Restoration Plan and Schedule for Future Work, dated May 31, 1990.

2.1 SITE RESTORATION

On July 10, 1990 Excavation II (Drawing 2) was backfilled with compacted granular soil.

2.2 GROUNDWATER INVESTIGATIONS

2.2.1 Groundwater Sampling and Analyses

Groundwater samples were collected on October 25, 1991 from monitoring wells MW-1, MW-2, MW-3, and MW-5. These samples were submitted, under chain of custody protocols, to NET Pacific, Inc., a California-certified analytical laboratory located in Santa Rosa, California. The samples were analyzed for TPH-g, TPH-d, and BTEX following the recommended analytical methods listed in Table 3. The samples are also analyzed for volatile organic (EPA Methods 601 and 602). Analytical data for the samples collected from the monitoring wells are summarized in Table 6. Copies of analytical laboratory reports and chain-of-custody forms are provided in Appendix C.

2.2.2 Physical Monitoring Activities

During Q4/90, wells MW-1, MW-2, MW-3 and MW-5 were physically measured once for depth-to-water, and the presence of floating product. A summary of these results is presented in Table 7. Field parameters measured during groundwater sampling activities are summarized in Table 8.

SECTION 3

FINDINGS AND DISCUSSION

3.1 SOIL

The soil stratigraphy revealed in the excavations and monitoring wells consists of three major soil layers above the local bedrock: (1) dark brown topsoil and fill to a depth of approximately 5 feet below ground surface (bgs), (2) light brown firm silty clay subsoil (or colluvium) to a depth of approximately 11 feet (bgs), and (3) damp to wet gravelly sand (highly weathered bedrock) below 11 feet (bgs) (CEW report, January 16, 1990). The exploratory borings encountered weathered Franciscan bedrock at about 12 to 14 feet.

3.1.1 Stratigraphy

Drilling of five borings in 1990 confirmed the initial soil stratigraphy exposed in the excavations. Drilling results are described below.

Clay, topsoil, loam, and minor sand and gravel constitutes the upper 4 to 5 feet of the soil sequence. This interval has been informally named "Soil Horizon I" in prior reports (CEW, January 16, 1990). Petroleum odor from the Soil Horizon I zone was observed during excavation and sampling in the vicinity of the former pump islands. On the eastern side of the site, this zone exhibited no odor, and one only sample was collected,

Underlying the topsoil is a dense, light brown silty clay with minor intercalated lenses of clayey sand (inferred less than 6" thick, discontinuous), which extend to approximately 9 to 11 feet bgs; this interval is referenced as "Soil Horizon II" in prior reports.

Immediately below Soil Horizon II exist discontinuous, thin (less than 3 feet thick) lenses of saturated, poorly-sorted sand, gravel silt and clay. This interval represents the "Soil Horizon III". The sand is grayish green in color, loosely consolidated, well graded (poorly sorted), with abundant angular and rounded shale pebbles of 3/4 inch diameter. Based upon data from the monitoring wells, Soil Horizon III is interpreted as the upper highly weathered zone of the Franciscan bedrock.

Franciscan bedrock extends from the base of Soil Horizon II or Soil Horizon III to 25 feet below grade the maximum depth of exploration (Drawing 3). The bedrock consists of mixed shale, sandstone and greenstone, in a clay-rich matrix.

3.1.2 Results of Chemical Analyses

Soil samples from the monitoring well borings contained levels of total petroleum hydrocarbons as diesel (TPH-d) ranging from 2.4 milligrams per kilogram (mg/kg) in boring MW-3 at 15 feet bgs to 18 mg/kg in boring SB-2 at 6.5 feet. Levels of BTEX were found in samples from borings MW-2, MW-3, MW-5, SB-1 and SB-2. Total lead ranged from 3.9 mg/kg in boring MW-5 at 20 feet bgs to 35 mg/kg in MW-5 at 25 feet bgs. The results of soil chemical analyses are summarized in Table 4.

3.1.3 Discussion

At present, it appears that minor residual contamination remains near the waste oil tank. Contaminated soil has been almost completely removed by excavation operations.

3.2 GROUNDWATER

3.2.1 Physical Parameters

Floating product was not present in wells at the site during Q4/90 monitoring activities. No petroleum odors were noted in any of the wells.

3.2.2 Elevation and Gradient

Depth to groundwater at the time of the Q4/90 monitoring ranged from 9.44 to 10.12 ft. bgs. Groundwater flow is to the south with a gradient of approximately 0.08 ft/ft (Drawing 4).

3.2.3 Results of Chemical Analyses

Groundwater samples collected from monitoring well MW-3 showed no detectable concentrations of hydrocarbons. The sample from MW-1 contained a trace amount of TPH-g, MW-5 a trace amount of toluene and MW-2 contained detectable concentrations of BTEX, TPH-g, and TPH-d. No detectable concentrations of purgeable halocarbons or purgeable aromatics with the exception of BTEX were detected in any of the wells.

3.2.4 Discussion

Groundwater monitoring well MW-2 continues to show detectable concentrations of TPH-g, BTEX and TPH-d. No purgeable halocarbons and aromatics (EPA Methods 601 and 602), with the exception of BTEX compounds, have not been detected at MW-2. Wells MW-1, MW-3 and MW-5 continue to indicate no detectable concentrations of most of these constituents. Well MW-1 contained TPH-g at a concentration of 0.10 mg/L and 0.06 mg/L in a duplicate sample. MW-5 contained toluene at a concentration of 0.0007 mg/L.

SECTION 4

NEXT QUARTER ACTIVITIES

4.1 PROPOSED ACTIVITIES

The following activities will be continued in Q1/91:

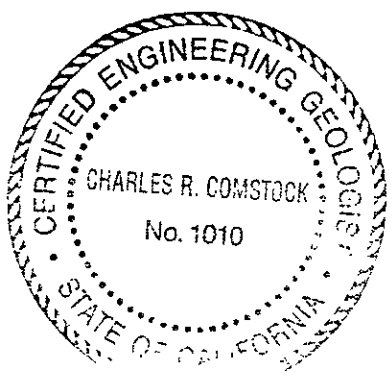
- Continue monitoring groundwater conditions. Groundwater samples will be analyzed for TPH-g, BTEX, and TPH-d following the analytical methods listed in Table 3. Any other activity conducted during Q1/91 will be reported in Report of Activities for Q1/91 scheduled for to submittal the regulating agencies of jurisdiction on March 29, 1991.

CERTIFICATION

This report of activities for the Shell Oil Company facility at 2724 Castro Valley Boulevard, Castro Valley, California has been prepared by the staff of **Converse Environmental West** under the professional supervision of the Engineer and/or Geologist whose seal(s) and signature(s) appear hereon.

The findings, recommendations, specifications or professional opinions are presented, within the limits prescribed by the Client, after being prepared in accordance with generally accepted professional engineering and geologic practice. We make no other warranty, either expressed or implied.

Respectfully submitted,



CHARLES R. COMSTOCK
Technical Director

PRIMARY CONTACTS

Shell Oil Company Facility
2724 Castro Valley Boulevard
Castro Valley, California

Quarter 4, 1990

Regional Water Quality Control Board Representative:	Ms. Penny Silzer San Francisco Bay Regional Water Quality Control Board 1800 Harrison Street, Room 700 Oakland, California 94612
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Shell Engineer:	Ms. Jack Brastad Shell Oil Company 1390 Willow Pass Road, Suite 900 Concord, California 94520
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Registered Geologist in Charge:	Mr. Charles R. Comstock Converse Environmental West 55 Hawthorne Street, Suite 500 San Francisco, California 94105
Site Owner:	Mr. Matthew Righetti, Esq. 1410 Jackson Street Oakland, CA 94612

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TABLES

TABLE 1. ACTIVITY SUMMARY - QUARTER 4, 1990

Former Shell Oil Company Site
2724 Castro Valley Road
Castro Valley, California

	PERCENT COMPLETE			
	Quarter 4, 1990		Total to Date	
Activity	Onsite	Offsite	Onsite	Offsite
Soil Characterization	0	N/A	90	NA
Groundwater Characterization (Dissolved Product)	0	0	30	0
Groundwater Characterization (Floating Product)	NA	NA	NA	NA
Soil Remediation	0	NA	90*	N/A
Groundwater Remediation (Dissolved Product)	0	0	0	0
Groundwater Remediation (Floating Product)	NA	NA	NA	NA

NOTES:

* Presumes that excavation to 11 feet below ground surface will be accepted as the full vertical extent of the unsaturated zone

NA not applicable

TABLE 2. SOIL BORING INFORMATION

Former Shell Oil Company Site
2724 Castro Valley Road
Castro Valley, California

Boring No.	Date Drilled	Total Depth (ft bgs)	Completion	Unsaturated Soil Samples (ft bgs)	Saturated Soil Samples (ft bgs)
MW-1	1/18/90	16	4" diameter well	5, 10	NC
MW-2	1/19/90	15	4" diameter well	5, 9, 15, 20, 25	NC
MW-3	1/19/90	25	4" diameter well	5, 10, 15	NC
MW-5	1/22/90	23	4" diameter well	5, 9, 15, 20, 25	NC
SB-1	1/18/90	15	Abandoned 01/18/90	5, 9	NC

NOTES:

ft bgs feet below ground surface
NC none collected

TABLE 3. RECOMMENDED MINIMUM VERIFICATION ANALYSES FOR UNDERGROUND TANK LEAKS

From: RWQCB Guidelines for Additional Fuel Tank Leaks (Revised August 10, 1990)

HYDROCARBON LEAK	SOIL ANALYSIS		WATER ANALYSIS	
Unknown Fuel	TPH-g	GCFID (5030)	TPH-g	GCFID (5030)
	TPH-d	GCFID (3550)	TPH-d	GCFID (3510)
	BTEX	8020 or 8240	BTEX	602, 624 or 8260
	TPH & BTEX	8260	BTEX	602, 624 or 8260
Leaded Gas	TPH-g	GCFID (5030)	TPH-g	GCFID (5030)
	BTEX	8020 or 8240	BTEX	602, 624 or 8260
	TPH & BTEX	8260	BTEX	602, 624 or 8260
	TOTAL LEAD	AA	TOTAL LEAD	AA
		OPTIONAL		
	TEL	DHS-LUFT	TEL	DHS-LUFT
	EDB	DHS-AB1803	EDB	DHS-AB1803
Unleaded Gas	TPH-g	GCFID (5030)	TPH-g	GCFID (5030)
	BTEX	8020 or 8240	BTEX	602, 624 or 8260
	TPH & BTEX	8260		
Diesel	TPH-d	GCFID (3550)	TPH-d	GCFID (3510)
	BTEX	8020 or 8240	BTEX	602, 624 or 8260
	TPH & BTEX	8260		
Jet Fuel	TPH-d	GCFID (3550)	TPH-d	GCFID (3510)
	BTEX	8020 or 8240	BTEX	602, 624 or 8260
	TPH & BTEX	8260		
Kerosene	TPH-d	GCFID (3550)	TPH-d	GCFID (3510)
	BTEX	8020 or 8240	BTEX	602, 624 or 8260
Fuel/Heating Oil	TPH-d	GCFID (3550)	TPH-d	GCFID (3510)
	BTEX	8020 or 8240	BTEX	602, 624 or 8260
Chlorinated Solvents	CL HC	8010 or 8240	CL HC	601 or 624
	BTEX	8020 or 8240	BTEX	602 or 624
	CL HC & BTEX	8260	CL HC & BTEX	8260
Non Chlorinated Solvents	TPH-d	GCFID (3550)	TPH-d	GCFID (3510)
	BTEX	8020 or 8240	BTEX	602 or 624
	TPH & BTEX	8260	TPH & BTEX	8260
Waste and Used Oil or Unknown	TPH-g	GCFID (5030)	TPH-g	5520 C&F
	TPH-d	GCFID (3550)	TPH-d	GCFID (3510)
	TPH & BTEX	8260		
	O & G	5520 D&F	O & G	5520 C&F
	BTEX	8020 or 8240	BTEX	602, 624 or 8260
	CL HC	8010 or 8240	CL HC	601 or 624
	ICAP or AA TO DETECT METALS: Cd, Cr, Pb, Zn, Ni			
	METHOD 8270 FOR SOIL OR WATER TO DETECT:			
	PCB*		PCB*	
	PCP*		PCP*	
	PNA		PNA	
	CREOSOTE		CREOSOTE	

*If found analyze for dibenzofurans (PCBs) or dioxins (PCP)

TABLE 4. RESULTS OF SOIL CHEMICAL ANALYSES (mg/kg)

Former Shell Oil Company Site
2724 Castro Valley Road
Castro Valley, California

Boring No.	Sample Depth (ft bgs)	Date Sampled	TPH-g	TPH-d	TPH-mo	Benzene	Toluene	Ethyl-Benzene	Xylenes	Total Lead
MW-1	5'	1/18/90	<1.0	5.8	73	<2.5	<2.5	<2.5	<2.5	4.4
MW-1	10'	1/18/90	<1.0	4.4	39	<2.5	<2.5	<2.5	<2.5	4.3
MW-2[1]	5'	1/19/90	<1.0	14	90	<2.5	<2.5	<2.5	<2.5	4.6
MW-2[2]	9'	1/19/90	<1.0	<1.0	23	<2.5	<2.5	<2.5	<2.5	5.3
MW-2[3]	15'	1/19/90	<1.0	3.1	<10	3.2	2.9	<2.5	54	6.3
MW-2[4]	20'	1/19/90	<1.0	3.2	<10	8.4	21	<2.5	16	7.9
MW-2[5]	25'	1/19/90	<1.0	8.2	19	23	34	3.6	23	8.0
MW-3	5'	1/19/90	<1.0	<1.0	<10	<2.5	5.9	<2.5	<2.5	6.2
MW-3	10'	1/19/90	<1.0	<1.0	<10	<2.5	11	<2.5	<2.5	5.8
MW-3	15'	1/19/90	<1.0	2.4	<10	<2.5	23	<2.5	7.4	6.5
MW-5	5'	1/22/90	<1.0	<1.0	<10	<2.5	6.5	<2.5	2.6	5.5
MW-5	9'	1/22/90	<1.0	<1.0	<10	<2.5	3.1	<2.5	<2.5	6.4
MW-5	15'	1/22/90	<1.0	<1.0	<10	<2.5	4.4	<2.5	2.7	8.0
MW-5	20'	1/22/90	<1.0	1.6	<10	3.0	11	<2.5	6.1	35
MW-5	25'	1/22/90	<1.0	<1.0	<10	<2.5	6.0	<2.5	4.9	3.9
SB-1	5'	1/18/90	<1.0	<1.0	<10	<2.5	6.7	<2.5	4.6	4.7
SB-1	9'	1/18/90	<1.0	<1.0	<10	<2.5	7.7	<2.5	3.4	6.5
SB-1	10	1/18/90	<1.0	<1.0	<10	<2.5	18	<2.5	6.8	NR
SB-2-2A[6]	4.5	5/9/90	1.0	14	73	<2.5	<2.5	3.9	16	9.1
SB-2-3A[7]	6.5	5/9/90	<1	18	26	<2.5	<2.5	<2.5	<2.5	7.0

NOTES:

1 Sample contained 370 ppm total oil and grease, 350 ppm non-polar oil and grease, 18 ppm chromium, and 67 ppm zinc
2 Sample contained 45 ppm chromium and 56 ppm zinc
3 Sample contained 40 ppm chromium, 60 ppm zinc, 240 ppb total xylenes, and 380 ppb bis (2-ethylhexyl) phthalate
4 Sample contained 53 ppm chromium, 99 ppm zinc, and 550 ppb bis (2-ethylhexyl) phthalate
5 Sample contained 48 ppm chromium and 110 ppm zinc
6 Sample contained 33 ppm chromium and 46 ppm zinc
7 Sample contained 32 ppm chromium and 46 ppm zinc
NR Not requested

TABLE 5. WELL INSTALLATION INFORMATION

Former Shell Oil Company Site
2724 Castro Valley Road
Castro Valley, California

Well No.	Date Installed	Well Diameter (inches)	Total Depth of Well (ft bgs)	Screened Interval (ft bgs)	Bentonite Seal Interval (ft bgs)	Grout Seal Interval (ft bgs)
MW-1	1/18/90	4	16	6 to 16	4 to 6	0 to 4
MW-2	1/19/90	4	15	5 to 15	3 to 4	0 to 3
MW-3	1/19/90	4	25	5 to 25	3 to 4	0 to 3
MW-5	1/22/90	4	23	9 to 23	6 to 8	0 to 6

NOTES:

ft bgs Feet below ground surface
CEW Converse Environmental West

TABLE 6. RESULTS OF GROUNDWATER CHEMICAL ANALYSES

Former Shell Oil Company Site
2724 Castro Valley Road
Castro Valley, California

Concentration (mg/L)

Well No.	Date Sampled	TPH-g	TPH-d	Benzene	Toluene	Ethyl-Benzene	Xylenes
MW-1	02/09/90	<1.0	NS	0.00058	0.00063	<0.0005	<0.0005
MW-1	04/20/90	<0.05	NS	<0.0005	<0.0005	<0.0005	<0.0005
MW-1	07/31/90	<0.05	NS	<0.0005	<0.0005	<0.0005	<0.0005
MW-1	**10/25/90**	**0.10**	**<0.05**	**<0.0005**	**<0.0005**	**<0.0006**	**<0.0006**
MW-1Dup	**10/25/90**	**0.06**	**<0.05**	**<0.0005**	**<0.0005**	**<0.0006**	**<0.0006**
MW-2	02/09/90	8.6	4.1	0.360	0.410	0.0065	0.670
MW-2	04/20/90	9.1	1.8	0.500	0.330	0.110	0.900
MW-2	07/31/90	5.3	0.6	0.550	0.038	<0.0005	0.280
MW-2	**10/25/90**	**4.8**	**0.30**	**0.490**	**0.022**	**0.021**	**0.156**
MW-3	02/09/90	<1.0	NS	<0.0005	<0.0005	<0.0005	<0.0005
MW-3	04/20/90	<0.05	NS	<0.0005	<0.0005	<0.0005	<0.0005
MW-3	07/31/90	<0.05	NS	<0.0005	<0.0005	<0.0005	<0.0005
MW-3	**10/25/90**	**<0.05**	**<0.05**	**<0.0005**	**<0.0005**	**<0.0006**	**<0.0006**
MW-5	02/09/90	<1.0	NS	<0.0005	<0.0005	<0.0005	<0.0005
MW-5	04/20/90	<0.05	NS	<0.0005	<0.0005	<0.0005	<0.0005
MW-5	07/31/90	<0.05	NS	<0.0005	<0.0005	<0.0005	<0.0005
MW-5	**10/25/90**	**<0.05**	**<0.05**	**<0.0005**	**0.0007**	**<0.0006**	**<0.0006**

NOTES:
Dup duplicate sample
TPH-g total petroleum hydrocarbons as gasoline (GCFID)
TPH-d total petroleum hydrocarbons as diesel (GCFID)
NS not sampled
MW-4 was not completed as groundwater monitoring well
Bold items indicate the results of chemical analyses conducted during Quarter 4, 1990.

TABLE 7. GROUNDWATER MONITORING INFORMATION

Former Shell Oil Company Site
2724 Castro Valley Road
Castro Valley, California

Well No.	Date Monitored	Depth to Water (ft bgs)	Water Table Elevation (ft)	Petroleum Odor In Water	Floating Product Thickness (inches)	Comments
MW-1	02/08/90	8.39	91.39	NS	NS	---
El. 99.78'	04/20/90	9.21	90.57	NS	NS	---
	07/30/90	9.21	90.57	NS	NS	---
	10/25/90	**9.44**	**90.34**	**NS**	**NS**	—
MW-2	02/08/90	7.33	93.50	NS	NS	---
El. 100.83'	04/20/90	8.63	92.20	NS	Slight	---
	07/30/90	8.78	92.05	NS	Slight	---
	10/25/90	**9.50**	**91.33**	**NS**	Strong	—
MW-3	02/08/90	8.91	92.57	NS	NS	---
El. 101.48'	04/20/90	10.20	91.28	NS	NS	---
	07/30/90	10.61	90.87	NS	NS	---
	10/25/90	**10.00**	**91.48**	**NS**	**NS**	—
MW-5	02/08/90	8.80	91.10	NS	NS	---
El. 99.90'	04/20/90	9.35	90.55	NS	NS	---
	07/30/90	9.49	90.41	NS	NS	---
	10/25/90	**10.12**	**89.78**	**NS**	**NS**	—

NOTES:

ft bgs feet below ground surface
NS none observed
All elevations are tied into a temporary benchmark elevation of 100.00 feet
Boldface items indicate the results of measurements conducted duirng Quarter 4, 1990.

TABLE 8. FIELD PARAMETERS MEASURED DURING GROUNDWATER SAMPLING

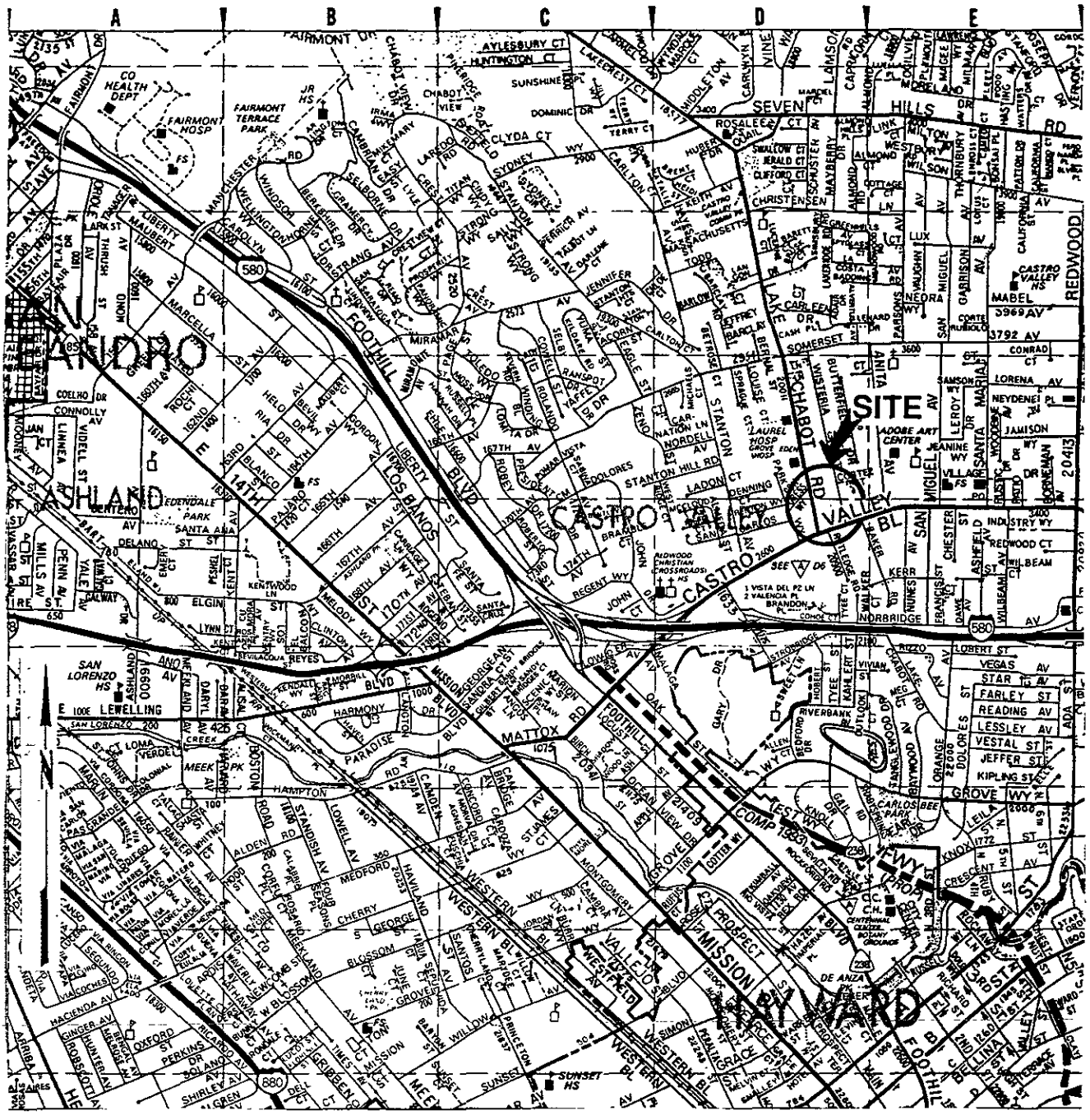
Former Shell Oil Company Site
2724 Castro Valley Blvd.
Castro Valley, California

Well Number	Date Sampled	Time	Purge Method	Total Gallons Purged	pH (pH units)	Conductivity (µmhos)	Temperature (° C)	Notes
MW-1	10/25/90	12:25	Hand Bailed	0	7.02	125	23.6	No odor or sheen
		12:40	Hand Bailed	3	7.04	135	23.4	Clear
		12:42	Hand Bailed	6	7.06	140	23.3	Clear
		12:44	Hand Bailed	9	7.06	130	23.4	Clear
		12:46	Hand Bailed	11	7.06	140	23.2	No odor, murky
MW-2	10/25/90	12:00	Hand Bailed	0	7.25	120	22.9	No sheen, odor
		12:04	Hand Bailed	3	7.11	120	22.5	Clear, odor
		12:08	Hand Bailed	6	7.15	175	22.1	Clear, odor
		1:25	Hand Bailed	10	7.16	170	21.7	Strong odor
MW-3	10/25/90	2:15	Cent. Pump	0	7.14	175	24.3	No odor or sheen
		2:23	Cent. Pump	10	7.28	175	23.5	Clear
		2:30	Cent. Pump	15	7.23	330	22.4	Clear
		2:40	Cent. Pump	20	7.22	330	22.4	Clear
		2:47	Hand Bailed	27	7.23	325	22.6	No odor, murky
MW-5	10/25/90	10:00	Cent. Pump	0	7.19	250	22.0	No odor or sheen
		10:20	Cent. Pump	5	7.13	260	21.9	Clear
		10:31	Cent. Pump	10	7.07	210	21.3	No odor, murky
		10:45	Cent. Pump	15	7.13	215	21.5	No odor, murky
		10:51	Cent. Pump	20	7.20	240	21.1	murky

NOTE:

NM none measured

DRAWINGS



SOURCE: Thomas Brothers Maps, 1989.

0 220 440

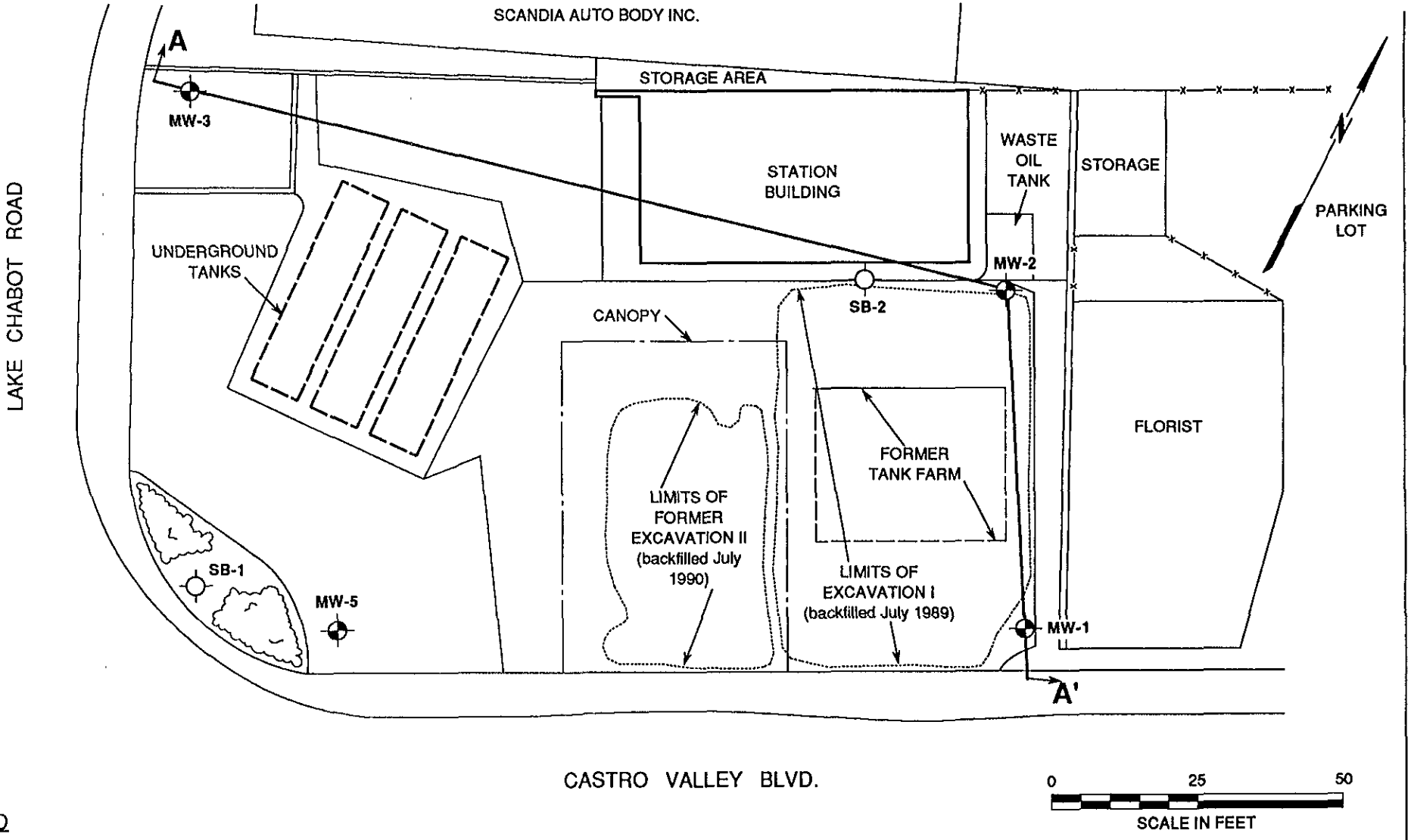
SCALE IN FEET

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

MW-1 GROUNDWATER MONITORING WELL

SB-1 SOIL BORING

A A' LINE OF GEOLOGIC CROSS SECTION

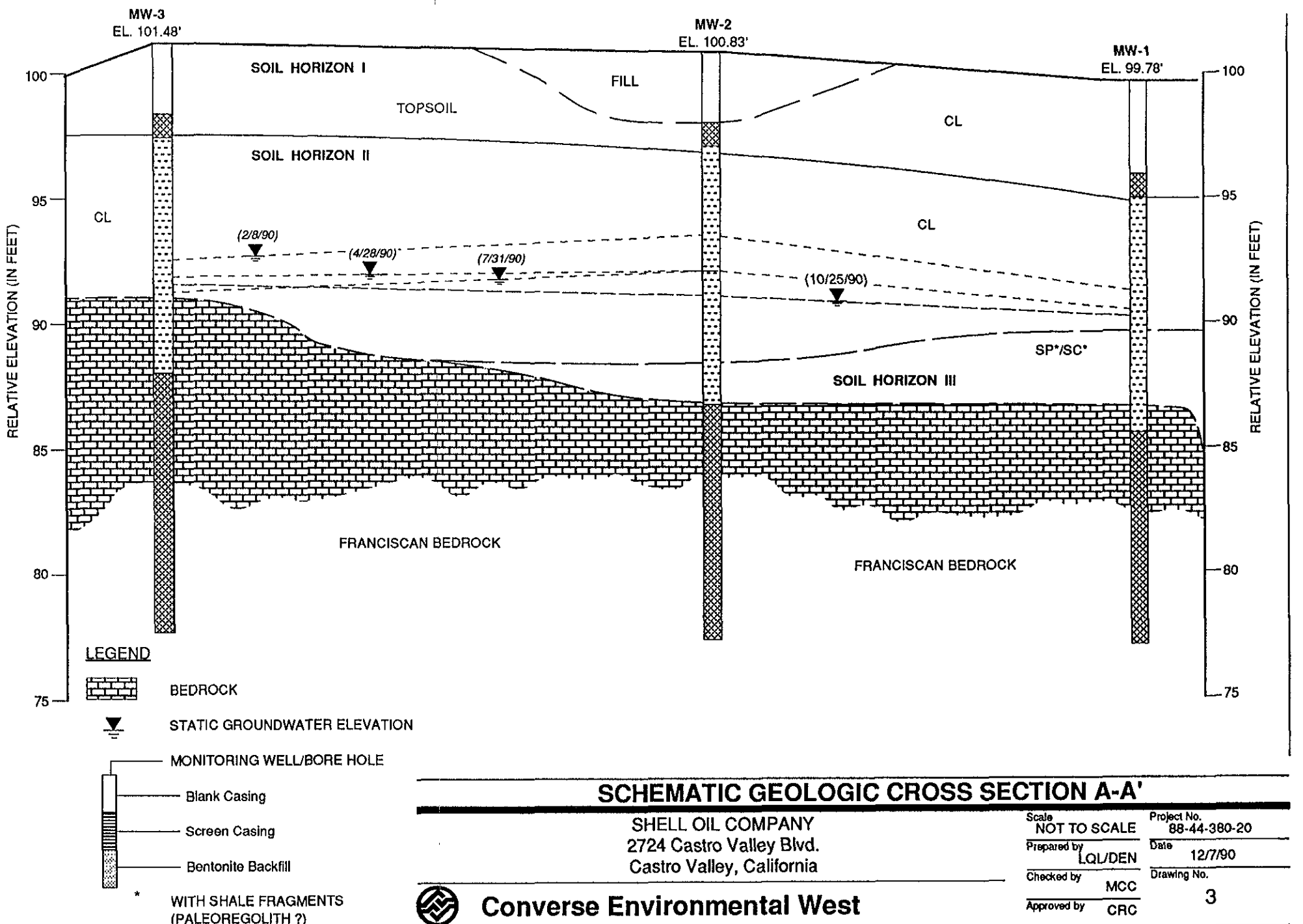
Base Map: Surveyed with electronic distance meter by CEW, 1990.

PLOT PLAN

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Converse Environmental West

Scale: AS SHOWN	Project No.: 88-44-380-20
Prepared by: DEN	Date: 9/25/90
Checked by: MCC	Drawing No.: 2
Approved by: CRC	

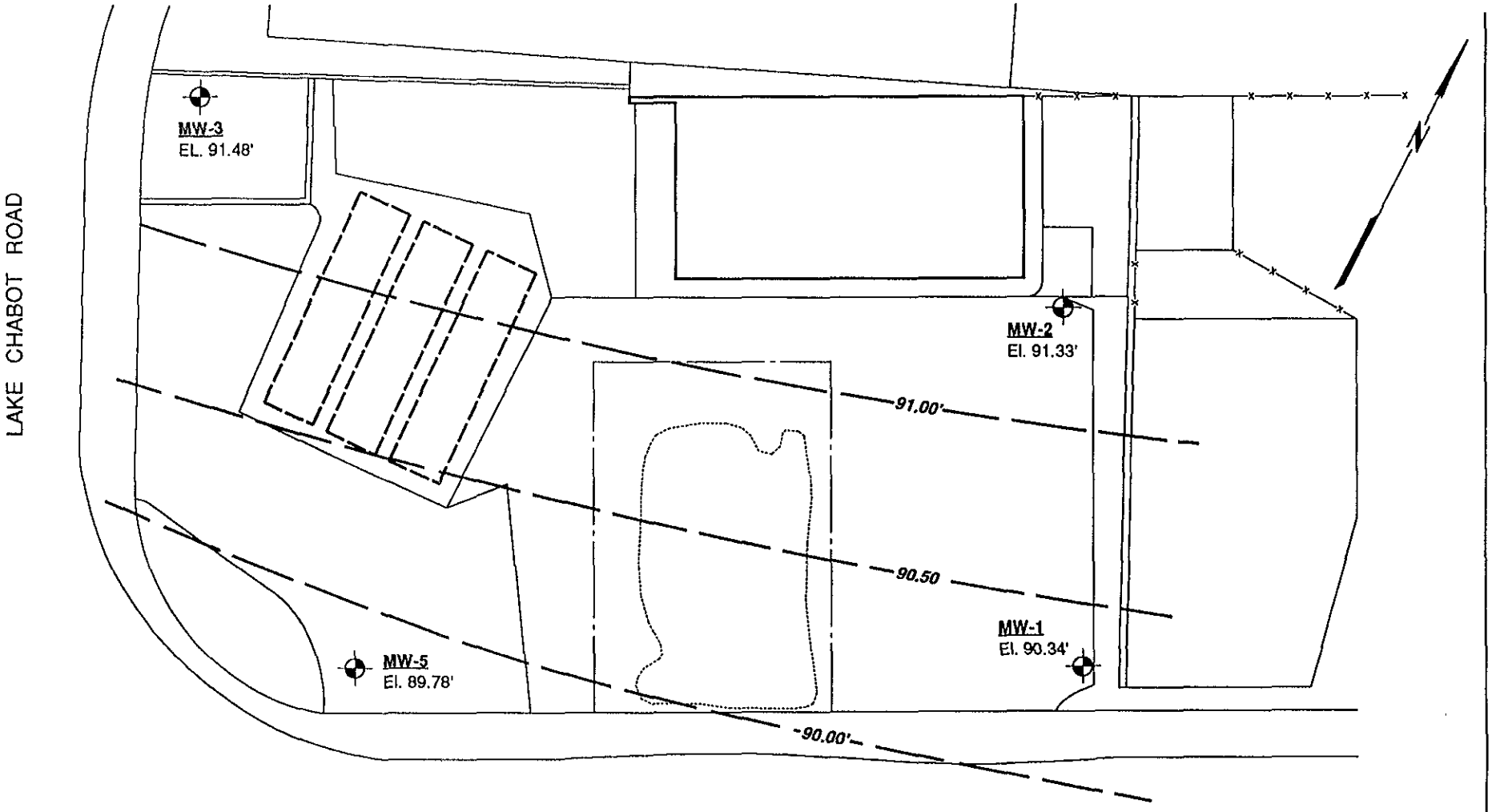


SCHEMATIC GEOLOGIC CROSS SECTION A-A'

SHELL OIL COMPANY
2724 Castro Valley Blvd.
Castro Valley, California

Converse Environmental West

Scale	NOT TO SCALE
Project No.	88-44-360-20
Prepared by	LQL/DEN
Date	12/7/90
Checked by	MCC
Drawing No.	3
Approved by	CRC



LEGEND

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

MW-1 GROUNDWATER MONITORING WELL SHOWING GROUNDWATER ELEVATION

NOTE: GROUNDWATER ELEVATIONS GIVEN WITH RESPECT TO A POINT HAVING AN ARBITRARY DATUM OF 100.00 FEET

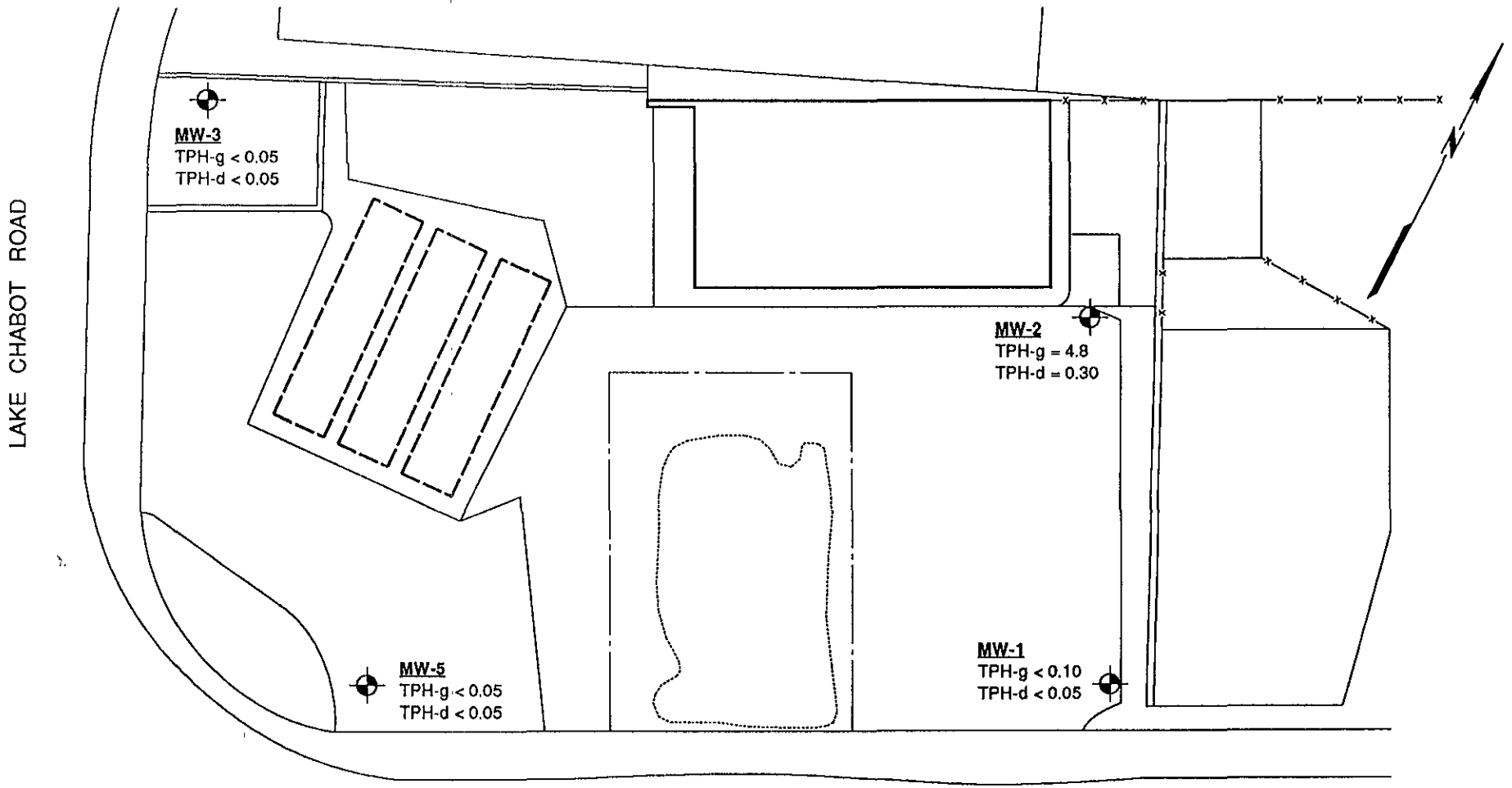
Base Map: Surveyed with electronic distance meter by CEW, 1990.

GROUNDWATER CONTOUR MAP Q4/90

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Converse Environmental West

Scale	AS SHOWN
Project No.	88-44-380-20
Prepared by	DEN/LQL
Date	12/7/90
Checked by	CRC
Drawing No.	4
Approved by	CRC



LEGEND

MW-1 ⊕ GROUNDWATER MONITORING WELL

TPH-g = TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (in milligrams per liter)

TPH-d = TOTAL PETROLEUM HYDROCARBONS AS DIESEL (in milligrams per liter)

NA NOT ANALYZED

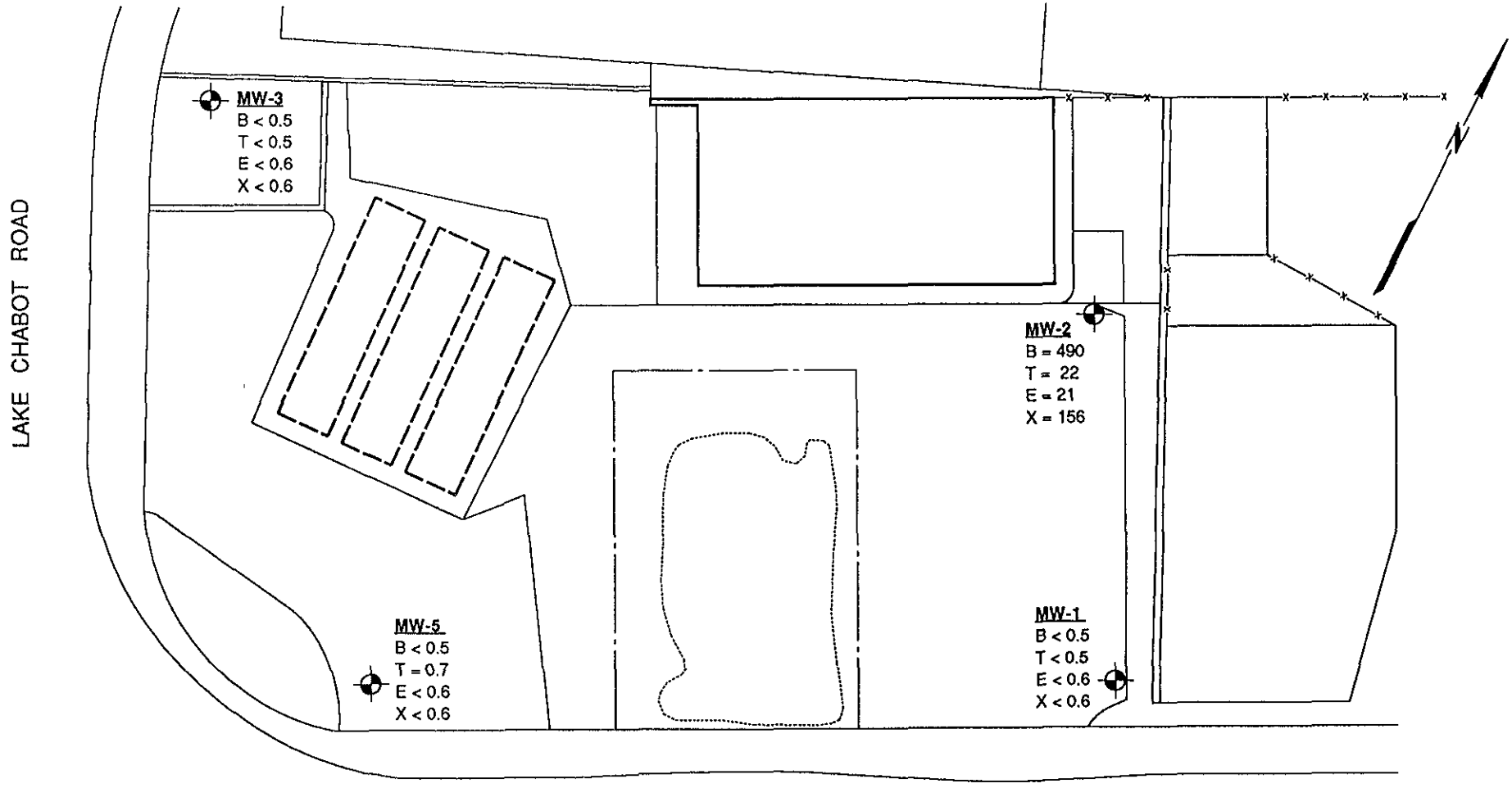
Base Map: Surveyed with electronic distance meter by CEW, 1990.

PLAN: GROUNDWATER TPH-g AND TPH-d Q4/90

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Converse Environmental West

Scale	AS SHOWN
Project No.	88-44-380-20
Prepared by	DEN/LQL
Date	12/7/90
Checked by	CRC
Drawing No.	5
Approved by	CRC



LEGEND

MW-1 GROUNDWATER MONITORING WELL

B = BENZENE (in micrograms per liter)

T = TOLUENE (in micrograms per liter)

E = ETHYLBENZENE (in micrograms per liter)

X = XYLENES (in micrograms per liter)

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

PLAN: GROUNDWATER BTEX Q4/90

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Converse Environmental West

Scale: AS SHOWN	Project No.: 88-44-380-20
Prepared by: DEN/LQL	Date: 12/7/90
Checked by: CRC	Drawing No.: 6
Approved by: CRC	

APPENDIX A

SITE DESCRIPTION

APPENDIX A

SITE DESCRIPTION

SITE DESCRIPTION

This retail gasoline station is located on the northeast corner of Castro Valley Blvd and Lake Chabot Road in Castro Valley, California (Drawing 1). It was an active service station, but is now temporarily closed due to ongoing renovation work, tank replacement, major building construction and environmental remediation.

Commercial businesses exist on all corners of the intersection. Surrounding neighborhood development is commercial along both roads. Single family dwellings are located on side streets nearby.

Topographically, the site is located on the western edge of a gentle valley (Castro Valley) underlain by recent alluvial fill. The site and the surrounding city block are nearly flat. A few hundred feet north of the site, the terrain rises gradually into the San Leandro Hills. An isolated hillside knob with 60 to 100 feet of relief exists 600 feet south of the site. An intermittent stream is shown 300 feet west on the Hayward, Calif USGS topographic map. This stream enters San Lorenzo Creek approximately one mile south of the site.

Surface water drainage has been altered by urbanization but is probably south to southwest. The static groundwater table varies in depth from 8.7 to 10.6 feet below the ground surface, with the flow generally towards the south.

SETTING

The facility is located within the East Bay Plain area of Alameda County. The site lies on Quaternary age older alluvium composed of weakly consolidated, slightly weathered, poorly sorted, irregularly interbedded clay, silt, sand and gravel (Helley et al., 1979), east of the Hayward fault (Hickenbottom and Muir, 1988). The Hayward Fault, a northwest trending strike-slip fault, passes approximately 1 mile west of the site. The alluvial deposits are underlain by consolidated bedrock of the Franciscan complex.

The older alluvium is the major groundwater reservoir in the East Bay Plain east of the Hayward Fault. In Castro Valley, however, the older alluvial deposits have a maximum thickness of approximately 80 feet and do not produce large quantities of water (Hickenbottom and Muir, 1988).

Recharge to groundwater reservoirs in the East Bay Plain area occur mainly from infiltration of rain, seepage from streams, and subsurface flow from adjacent areas. There is probably a small amount of recharge from excess irrigation water, lawn and garden watering, and leaking municipal sewer lines (Hickenbottom and Muir, 1988). Groundwater pumpage from wells is, at the present time, probably the main element of groundwater use. Discharge to streams, underflow to San Francisco Bay, and spring discharge are also contributory factors (Hickenbottom and Muir, 1988).

The quality of groundwater in the East Bay Plain area is generally good. Concentrations of Total Dissolved Solids are generally in the range of 300 to 1000 mg/l. It is likely that groundwater in shallow wells in Castro Valley have been affected by bacterial contamination, possibly from leaking sewers (Hickenbottom and Muir, 1988).

APPENDIX B
CHRONOLOGICAL SUMMARY

CHRONOLOGICAL SUMMARY
For Shell Property at
2724 Castro Valley Blvd., Castro Valley, California

The following chronological summary is based on information provided to Converse Environmental West (CEW) by Shell Oil Company (Shell). CEW was not provided with certain information related to the construction, operational, and environmental history of the facility. According to Shell, the following information is not available in Shell files: volume of contaminated soil removed at the time of tank removal, geometry of the excavation created during tank removal, if any, and date and volume of any possible releases at the facility.

Date	Description of Activity
11/21/86	Blaine Tech Services removed one 550 gallon waste oil tank and conducted field sampling.
04/22/88	Woodward-Clyde drilled and sampled three soil borings around the existing underground storage tank (UST) complex.
03/06/89	Crosby & Overton, Inc conducted field sampling during removal of 4 underground storage tanks. Contaminated soil was discovered and additional excavation and sampling was performed.
03/31/89	Field sampling in the vicinity of the new tank hole was performed.
05/05/89	Converse Environmental West (CEW) was retained by Shell Oil Co to supervise environmental activities at the site.
06/12/89	Soil samples SW-1 through SW-7 were collected.
07/05/89	Soil samples SW-8 through SW-11 were collected.
07/06/89	One water sample in the excavation pit was collected.
07/11/89	CEW sent an "Interim Sampling Report and Recommendations" to the Alameda County Health Care Services Agency (ACHCSA).
07/27/89	CEW sent an "Addendum to July 11, 1989 Interim Sampling Report and Recommendations" to the ACHCSA.
08/30/89	Soil samples SS-1 through SS-7 were collected.
10/02/89 to 10/11/89	Soil samples 1 through 4 and S-1 through S-7 were collected.
10/26/89	Samples 20 through 23, and stockpile samples were collected.
10/31/89	CEW sent a report titled "Soil Sampling Report" to the ACHCSA.
11/30/89	CEW sent a Draft Work Plan to the ACHCSA.
01/11/90	CEW sent a Progress Report for Q4/89 to the ACHCSA.

CHRONOLOGICAL SUMMARY (cont'd)

Date	Description of Activity
01/18/90 to 01/23/90	Bored and sampled MW-2 through MW-5 and installed MW-2, MW-3 and MW-5. MW-4 grouted. Surface completed: MW-2 and MW-3.
02/08/90	Developed MW-5. Surveyed wells MW-1, MW-2, MW-3, MW-5 and soil borings site survey.
02/09/90	Developed, sampled MW-1, MW-2, MW-3 and MW-5.
02/22/90	Sampled MW-2 for pesticides and oil and grease.
3/12/90	CEW requested permission from ACHA to backfill the existing excavation onsite.
3/16/90	CEW obtained site assessment information on uses of nearby properties, and reported fuel leaks from nearby underground tanks.
4/02/90	CEW conducted E.D.M. survey of adjacent streets, extending 200 to 300 feet from the site.
4/20/90	CEW conducted Q2/90 water sampling in MW-1, MW-2, MW-3 and MW-5. Requested analyses of TPH-g, TPH-d, BTEX, 601/602, oil and grease.
4/23/90	CEW arranged to have one segment of chain-link fence moved, to protect MW-3.
4-26-90	CEW, Shell, ACHCSA and Rheghetti meet at site to discuss backfilling of the existing excavation.
5-2-90	Shell received permission from ACHCSA to backfill the existing excavation.
5-31-90	CEW issues site restoration plan and schedule for future work.
6-27-90	CEW personnel visit the site to assess current conditions.
6-29-90	CEW issues Q2/90 report.
7-30-90	CEW samples and analyzes groundwater from MW-1, MW-2, MW-3 and MW-5.
9-28-90	CEW issues Quarter 3, 1990 report.
10-25-90	**CEW samples and analyzes groundwater from MW-1, MW-2, MW-3, and MW-5.**
12-31-90	**CEW issues Quarter 4, 1990 report.**

Bold Boldface indicates work completed this quarter.

APPENDIX C

LABORATORY REPORTS AND CHAIN-OF-CUSTODY FORMS

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Chuck Comstock
Converse Consultants
55 Hawthorne St, Ste 500
San Francisco, CA 94105

Date: 11-12-90
NET Client Acct No: 18.02
NET Pacific Log No: 4635
Received: 10-26-90 2100

Client Reference Information

SHELL, 2724 Castro Valley Blvd.; Project: 88-44-380-20

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

JS:rct
Enclosure(s)

NET Pacific, Inc.

Client No: 18.02 Date: 11-12-90
Client Name: Converse Consultants
NET Log No: 4635 Page: 2

Ref: SHELL, 2724 Castro Valley Blvd.; Project: 88-44-380-20

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results: trip blank 10-22-90 66669	field blank 10-25-90 1030 66670	Units
Oil & Grease(Total)	SM5520B	5	ND	ND	mg/L
Oil & Grease(Non-Polar)	SM5520B/F	10	ND	ND	mg/L
METHOD 601/602					
DATE ANALYZED			11-01-90	11-03-90	
DILUTION FACTOR*			1	1	
Bromodichloromethane		0.4	ND	ND	ug/L
Bromoform		0.4	ND	ND	ug/L
Bromomethane		0.4	ND	ND	ug/L
Carbon tetrachloride		0.4	ND	ND	ug/L
Chlorobenzene		0.4	ND	ND	ug/L
Chloroethane		0.4	ND	ND	ug/L
2-Chloroethylvinyl ether		1.0	ND	ND	ug/L
Chloroform		0.4	ND	ND	ug/L
Chloromethane		0.4	ND	ND	ug/L
Dibromochloromethane		0.4	ND	ND	ug/L
1,2-Dichlorobenzene		0.4	ND	ND	ug/L
1,3-Dichlorobenzene		0.4	ND	ND	ug/L
1,4-Dichlorobenzene		0.4	ND	ND	ug/L
Dichlorodifluoromethane		0.4	ND	ND	ug/L
1,1-Dichloroethane		0.4	ND	ND	ug/L
1,2-Dichloroethane		0.4	ND	ND	ug/L
1,1-Dichloroethene		0.4	ND	ND	ug/L
trans-1,2-Dichloroethene		0.4	ND	ND	ug/L
1,2-Dichloropropane		0.4	ND	ND	ug/L
cis-1,3-Dichloropropene		0.4	ND	ND	ug/L
trans-1,3-Dichloropropene		0.4	ND	ND	ug/L
Methylene Chloride		10	ND	ND	ug/L
1,1,2,2-Tetrachloroethane		0.4	ND	ND	ug/L
Tetrachloroethene		0.4	ND	ND	ug/L
1,1,1-Trichloroethane		0.4	ND	ND	ug/L
1,1,2-Trichloroethane		0.4	ND	ND	ug/L
Trichloroethene		0.4	ND	ND	ug/L
Trichlorofluoromethane		0.4	ND	ND	ug/L
Vinyl chloride		2.0	ND	ND	ug/L
Benzene		0.5	ND	ND	ug/L
Ethylbenzene		0.6	ND	ND	ug/L
Toluene		0.5	1.1	1.1	ug/L
Xylenes, total		0.6	ND	0.9	ug/L

NET Pacific, Inc.

Client No: 18.02 Date: 11-12-90
Client Name: Converse Consultants
NET Log No: 4635 Page: 3

Ref: SHELL, 2724 Castro Valley Blvd.; Project: 88-44-380-20

			Descriptor, Lab No. and Results		
			trip blank 10-22-90	field blank 10-25-90 1030	
Parameter	Method	Reporting Limit	66669	66670	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			10-31-90	10-31-90	
METHOD GC FID/5030			--	--	
as Gasoline	DOHSLUFT	0.05	ND	ND	mg/L
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE EXTRACTED			10-31-90	10-31-90	
DATE ANALYZED			10-31-90	10-31-90	
METHOD GC FID/3510			--	--	
as Diesel		0.05	ND	ND	mg/L
as Motor Oil		0.5	ND	ND	mg/L

NET Pacific, Inc

Client No: 18.02
Client Name: Converse Consultants
NET Log No: 4635

Date: 11-12-90
Page: 4

Ref: SHELL, 2724 Castro Valley Blvd.; Project: 88-44-380-20

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results MW-5 10-25-90 1130 66671	MW-1 10-25-90 1300 66672	Units
Oil & Grease(Total)	SM5520B	5	ND	ND	mg/L
Oil & Grease(Non-Polar)	SM5520B/F	10	ND	ND	mg/L
METHOD 601/602					
DATE ANALYZED			11-01-90	11-01-90	
DILUTION FACTOR*			1	1	
Bromodichloromethane		0.4	ND	ND	ug/L
Bromoform		0.4	ND	ND	ug/L
Bromomethane		0.4	ND	ND	ug/L
Carbon tetrachloride		0.4	ND	ND	ug/L
Chlorobenzene		0.4	ND	ND	ug/L
Chloroethane		0.4	ND	ND	ug/L
2-Chloroethylvinyl ether		1.0	ND	ND	ug/L
Chloroform		0.4	ND	ND	ug/L
Chloromethane		0.4	ND	ND	ug/L
Dibromochloromethane		0.4	ND	ND	ug/L
1,2-Dichlorobenzene		0.4	ND	ND	ug/L
1,3-Dichlorobenzene		0.4	ND	ND	ug/L
1,4-Dichlorobenzene		0.4	ND	ND	ug/L
Dichlorodifluoromethane		0.4	ND	ND	ug/L
1,1-Dichloroethane		0.4	ND	ND	ug/L
1,2-Dichloroethane		0.4	ND	ND	ug/L
1,1-Dichloroethene		0.4	ND	ND	ug/L
trans-1,2-Dichloroethene		0.4	ND	ND	ug/L
1,2-Dichloropropane		0.4	ND	ND	ug/L
cis-1,3-Dichloropropene		0.4	ND	ND	ug/L
trans-1,3-Dichloropropene		0.4	ND	ND	ug/L
Methylene Chloride		10	ND	ND	ug/L
1,1,2,2-Tetrachloroethane		0.4	ND	ND	ug/L
Tetrachloroethene		0.4	ND	ND	ug/L
1,1,1-Trichloroethane		0.4	ND	ND	ug/L
1,1,2-Trichloroethane		0.4	ND	ND	ug/L
Trichloroethene		0.4	ND	ND	ug/L
Trichlorofluoromethane		0.4	ND	ND	ug/L
Vinyl chloride		2.0	ND	ND	ug/L
Benzene		0.5	ND	ND	ug/L
Ethylbenzene		0.6	ND	ND	ug/L
Toluene		0.5	0.7	ND	ug/L
Xylenes, total		0.6	ND	ND	ug/L

NET Pacific, Inc.

Client No: 18.02 Date: 11-12-90
Client Name: Converse Consultants
NET Log No: 4635 Page: 5

Ref: SHELL, 2724 Castro Valley Blvd.; Project: 88-44-380-20

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results MW-5 10-25-90 1130 66671	MW-1 10-25-90 1300 66672	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			10-31-90	10-31-90	
METHOD GC FID/5030			--	--	
as Gasoline	DOHSLUFT	0.05	ND	0.10	mg/L
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE EXTRACTED			10-31-90	10-31-90	
DATE ANALYZED			10-31-90	10-31-90	
METHOD GC FID/3510			--	--	
as Diesel		0.05	ND	ND	mg/L
as Motor Oil		0.5	ND	ND	mg/L

NET Pacific, Inc

Client No: 18.02
Client Name: Converse Consultants
NET Log No: 4635

Date: 11-12-90
Page: 6

Ref: SHELL, 2724 Castro Valley Blvd.; Project: 88-44-380-20

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results 901025 10-25-90 1305 66673	 MW-2 10-25-90 1345 66674	Units
Oil & Grease(Total)	SM5520B	5	ND	ND	mg/L
Oil & Grease(Non-Polar)	SM5520B/F	10	ND	ND	mg/L
METHOD 601/602					
DATE ANALYZED			11-01-90	11-01-90	
DILUTION FACTOR*			1	1	
Bromodichloromethane		0.4	ND	ND	ug/L
Bromoform		0.4	ND	ND	ug/L
Bromomethane		0.4	ND	ND	ug/L
Carbon tetrachloride		0.4	ND	ND	ug/L
Chlorobenzene		0.4	ND	ND	ug/L
Chloroethane		0.4	ND	ND	ug/L
2-Chloroethylvinyl ether		1.0	ND	ND	ug/L
Chloroform		0.4	ND	ND	ug/L
Chloromethane		0.4	ND	ND	ug/L
Dibromochloromethane		0.4	ND	ND	ug/L
1,2-Dichlorobenzene		0.4	ND	ND	ug/L
1,3-Dichlorobenzene		0.4	ND	ND	ug/L
1,4-Dichlorobenzene		0.4	ND	ND	ug/L
Dichlorodifluoromethane		0.4	ND	ND	ug/L
1,1-Dichloroethane		0.4	ND	ND	ug/L
1,2-Dichloroethane		0.4	ND	ND	ug/L
1,1-Dichloroethene		0.4	ND	ND	ug/L
trans-1,2-Dichloroethene		0.4	ND	ND	ug/L
1,2-Dichloropropane		0.4	ND	ND	ug/L
cis-1,3-Dichloropropene		0.4	ND	ND	ug/L
trans-1,3-Dichloropropene		0.4	ND	ND	ug/L
Methylene Chloride		10	ND	ND	ug/L
1,1,2,2-Tetrachloroethane		0.4	ND	ND	ug/L
Tetrachloroethene		0.4	ND	ND	ug/L
1,1,1-Trichloroethane		0.4	ND	ND	ug/L
1,1,2-Trichloroethane		0.4	ND	ND	ug/L
Trichloroethene		0.4	ND	ND	ug/L
Trichlorofluoromethane		0.4	ND	ND	ug/L
Vinyl chloride		2.0	ND	ND	ug/L
Benzene		0.5	ND	490	ug/L
Ethylbenzene		0.6	ND	21	ug/L
Toluene		0.5	ND	22	ug/L
Xylenes, total		0.6	ND	156	ug/L

NET Pacific, Inc.

Client No: 18.02 Date: 11-12-90
Client Name: Converse Consultants
NET Log No: 4635 Page: 7

Ref: SHELL, 2724 Castro Valley Blvd.; Project: 88-44-380-20

			Descriptor, Lab No. and Results		
			901025 10-25-90 1305	MW-2 10-25-90 1345	
Parameter	Method	Reporting Limit	66673	66674	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (WATER)			--	--	
DILUTION FACTOR *			1	10	
DATE ANALYZED			10-31-90	11-02-90	
METHOD GC FID/5030			--	--	
as Gasoline	DOHSLUFT	0.05	0.06	4.8	mg/L
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE EXTRACTED			10-31-90	10-31-90	
DATE ANALYZED			10-31-90	10-31-90	
METHOD GC FID/3510			--	--	
as Diesel		0.05	ND	0.30	mg/L
as Motor Oil		0.5	ND	ND	mg/L

NET Pacific, Inc

Client No: 18.02 Date: 11-12-90
Client Name: Converse Consultants
NET Log No: 4635 Page: 8

Ref: SHELL, 2724 Castro Valley Blvd.; Project: 88-44-380-20

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results MW-3 10-25-90 1530 66675	Units
Oil & Grease(Total)	SM5520B	5	ND	mg/L
Oil & Grease(Non-Polar)	SM5520B/F	10	ND	mg/L
METHOD 601/602				
DATE ANALYZED			11-01-90	
DILUTION FACTOR*			1	
Bromodichloromethane		0.4	ND	ug/L
Bromoform		0.4	ND	ug/L
Bromomethane		0.4	ND	ug/L
Carbon tetrachloride		0.4	ND	ug/L
Chlorobenzene		0.4	ND	ug/L
Chloroethane		0.4	ND	ug/L
2-Chloroethylvinyl ether		1.0	ND	ug/L
Chloroform		0.4	ND	ug/L
Chloromethane		0.4	ND	ug/L
Dibromochloromethane		0.4	ND	ug/L
1,2-Dichlorobenzene		0.4	ND	ug/L
1,3-Dichlorobenzene		0.4	ND	ug/L
1,4-Dichlorobenzene		0.4	ND	ug/L
Dichlorodifluoromethane		0.4	ND	ug/L
1,1-Dichloroethane		0.4	ND	ug/L
1,2-Dichloroethane		0.4	ND	ug/L
1,1-Dichloroethene		0.4	ND	ug/L
trans-1,2-Dichloroethene		0.4	ND	ug/L
1,2-Dichloropropane		0.4	ND	ug/L
cis-1,3-Dichloropropene		0.4	ND	ug/L
trans-1,3-Dichloropropene		0.4	ND	ug/L
Methylene Chloride		10	ND	ug/L
1,1,2,2-Tetrachloroethane		0.4	ND	ug/L
Tetrachloroethene		0.4	ND	ug/L
1,1,1-Trichloroethane		0.4	ND	ug/L
1,1,2-Trichloroethane		0.4	ND	ug/L
Trichloroethene		0.4	ND	ug/L
Trichlorofluoromethane		0.4	ND	ug/L
Vinyl chloride		2.0	ND	ug/L
Benzene		0.5	ND	ug/L
Ethylbenzene		0.6	ND	ug/L
Toluene		0.5	ND	ug/L
Xylenes, total		0.6	ND	ug/L

NET Pacific, Inc.

Client No: 18.02 Date: 11-12-90
Client Name: Converse Consultants
NET Log No: 4635 Page: 9

Ref: SHELL, 2724 Castro Valley Blvd.; Project: 88-44-380-20

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results MW-3 10-25-90 1530 66675	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (WATER)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			10-31-90	
METHOD GC FID/5030			--	
as Gasoline	DOHSLUFT	0.05	ND	mg/L
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (WATER)			--	
DILUTION FACTOR *			1	
DATE EXTRACTED			10-31-90	
DATE ANALYZED			10-31-90	
METHOD GC FID/3510			--	
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L

Ref: SHELL, 2724 Castro Valley Blvd.; Project: 88-44-380-20

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Diesel	0.05	mg/L	84	ND	47	56	17
Motor Oil	0.5	mg/L	114	ND	N/A	N/A	N/A

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Gasoline	0.05	mg/L	115	ND	114	122	6.8

COMMENT: Blank Results were ND on other analytes tested.

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Chlorobenzene	0.4	ug/L	N/A	ND	114	110	3.6
1,1-Dichloroethene	0.4	ug/L	N/A	ND	106	97	8.9
Trichloroethene	0.4	ug/L	N/A	ND	103	97	6.0
Benzene	0.5	ug/L	N/A	ND	98	99	1.5
Toluene	0.5	ug/L	N/A	ND	103	104	< 1

COMMENT: Blank Results were ND on other analytes tested.

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Chlorobenzene	0.4	ug/L	N/A	ND	113	111	1.8
1,1-Dichloroethene	0.4	ug/L	N/A	ND	136	123	10
Trichloroethene	0.4	ug/L	N/A	ND	281	320	13
Benzene	0.5	ug/L	N/A	ND	95	91	4.3
Toluene	0.5	ug/L	N/A	ND	101	97	4.6

COMMENT: Blank Results were ND on other analytes tested.

NET Pacific, Inc

Client Acct: 18.02
Client Name: Converse Consultants
NET Log No: 4635

Date: 11-12-90
Page: 11

Ref: SHELL, 2724 Castro Valley Blvd.; Project: 88-44-380-20

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery
Oil & Grease(Total)	5	mg/L	97	ND	99	99
Oil & Grease(Non-Polar)	10	mg/L	97	ND	N/A	N/A

COMMENT: Blank Results were ND on other analytes tested.

NET Pacific, Inc

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
ICVS	:	Initial Calibration Verification Standard (External Standard).
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 16th Edition, APHA, 1985.

AFE # 086657
Wic # 204-1381-0407
Exp Code 5440
PM = CRC

CONVERSE ENVIRONMENTAL WEST

CHAIN OF CUSTODY RECORD

PROJECT NO.: 88-441-380-20
PROJECT NAME / CROSS STREET: 2724 Castro Valley Blvd SHELL
SAMPLERS: (Signature) Tina Sourkeer

STATION NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NUMBER OF CONTAINERS	ANALYSES: Tph-g	Tph-d	EPA-601	EPA-602	Oil&Grease
Trip Blank	10/25/90	10/22/90		✓	40 ml. VOA	1	✓		✓	✓	
Trip Blank		10/22/90		✓	1 litre Amber	1		✓			✓
Field Blank		10:30		✓	1 litre Amber	2		✓			✓
Field Blank		10:30		✓	40 ml. VOA	2	✓		✓	✓	
MW-5		11:30		✓	1 litre Amber	4		✓			✓
MW-5		11:30		✓	40 ml. VOA	6	✓		✓	✓	
MW-1		1:00		✓	1 litre Amber	3		✓			✓
MW-1		1:00		✓	40 ml. VOA	5	✓		✓	✓	
901025		1.05		✓	1 litre Amber	3		✓			✓
901025		1.05		✓	40 ml. VOA	5	✓		✓	✓	
MW-2		1:45		✓	1 litre Amber	3		✓			✓
MW-2	↓	1.45		✓	40 ml. VOA	5	✓		✓	✓	
				✓							

REMARKS: 4035

Standard Turnaround

Detection Limits

Tph-g = 0.05 ppm
Tph-d = 0.05 ppm
Oil & Grease = 10 ppm (5 ppm total Non Polar)
EPA-601 = NORMAL D.L.
EPA-602 =

RELINQUISHED BY: (Signature) Tina Sourkeer	DATE: 10/26/90 TIME: 16:10	RECEIVED BY: (Signature) Jeff Smith	RELINQUISHED BY: (Signature)	DATE: TIME:	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) Jeff Smith	DATE: 10/26 TIME:	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE: TIME:	RECEIVED BY: (Signature)
RELINQUISHED BY COURIER: (Sign.)	DATE: TIME:	RECEIVED BY MOBILE LAB: (Sign.)	RELINQ. BY MOBILE LAB: (Signature)	DATE: TIME:	RECEIVED BY COURIER: (Signature)
METHOD OF SHIPMENT		SHIPPED BY: (Signature)	RECEIVED FOR LAB: (Signature)	DATE 10/26/90 TIME: 2100	COURIER FROM AIRPORT: (Signature)

AFE # 086657
WIC # 204-1381-0407
Exp Code 5440
PM = CRC

CONVERSE ENVIRONMENTAL

CHAIN OF CUSTODY RECORD

PROJECT NO.: 88-44-380-20
PROJECT NAME / CROSS STREET: 2724 Castro Valley SHELL
SAMPLERS. (Signature): Tina Soerensen

STATION NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NUMBER OF CONTAINERS	Tph-g	Tph-d	Epa-601	Epa-602	Oil&Grease
MW-3	10/26/90	3:30		✓	1 litre Amber	3		✓			✓
MW-3	↓	3:30		✓	40 ml. VOA	5	✓		✓	✓	

REMARKS
4635

Standard Turnaround

Detection Limits
Tph-g = 0.05 ppm
Tph-d = 0.05 ppm
Oil&Grease =
Epa 601 =
Epa 602 =

RELINQUISHED BY : (Signature) Tina Soerensen	DATE : 10/26/90 TIME : 16:10	RECEIVED BY : (Signartue) Jeff Winkler	
RELINQUISHED BY : (Signature) Jeff Winkler	DATE : TIME :	RECEIVED BY : (Signartue)	
RELINQUISHED BY COURIER: (Sign.)	DATE : TIME :	RECEIVED BY MOBILE LAB : (Sign.)	
METHOD OF SHIPMENT		SHIPPED BY : (Signatue)	

RELINQUISHED BY : (Signature)	DATE : TIME :	RECEIVED BY : (Signature)
RELINQUISHED BY : (Signature)	DATE : TIME :	RECEIVED BY : (Signature)
RELINQ. BY MOBILE LAB : (Signatue)	DATE : TIME :	RECEIVED BY COURIER : (Signature)
RECEIVED FOR LAB : (Signature) K. Edwards	DATE : 10/26/90 TIME : 2100	COURIER FROM AIRPORT : (Signature)

APPENDIX D

COPIES OF FIELD MEASUREMENT RECORDS

CONVERSE ENVIRONMENTAL WEST
DAILY REPORT - SHELL OIL CO.

Project: 2724 Castro Valley Project No.: 88-44-380-20 Project Manager: CEC

Date: 10/25/90 Day: Thursday

CONVERSE PERSONNEL

Name	Mobe Start	Mobe End	Arrive Site	Leave Site	Demobe Start	Demobe End
T. Seenksen	7:30	8:30	9:15	3:45	4:30	5:00

23062: 54.

SUBCONTRACTORS

Name	Mobe Start	Mobe End	Arrive Site	Leave Site	Demobe Start	Demobe End	Ticket Number

WORK ACCOMPLISHED

Wells/Borings Bored/Sampled: _____
Wells Installed: _____
Wells/Borings Surface Completed: _____
Wells/Borings Abandoned: _____
Wells Developed: _____
Wells Initially Sampled: _____
Wells Periodically Sampled: MW-1, MW-2, MW-3, MW-5
Wells/Borings/Structures Surveyed: _____

Work Accomplished - Not Listed Above - Expanded Description: Purged and Sampled MW-1, 2, 3, 5. MW-2 only well not dedicated w/ PVC. Hand bailed. Fairly slow recharge. MW-1 excellent recharge and purge. MW-3 fairly slow recharge, well went too low to continue pumping, so hand-bailed. MW-5 fairly good recharger

Deviations From Standard Operating Procedures: _____

CONVERSE ENVIRONMENTAL WEST

SITE WASTE REPORT

Client: Shell Oil Date: 10/25/90

Site: 2724 Castro Valley Personnel: T. Soenksen

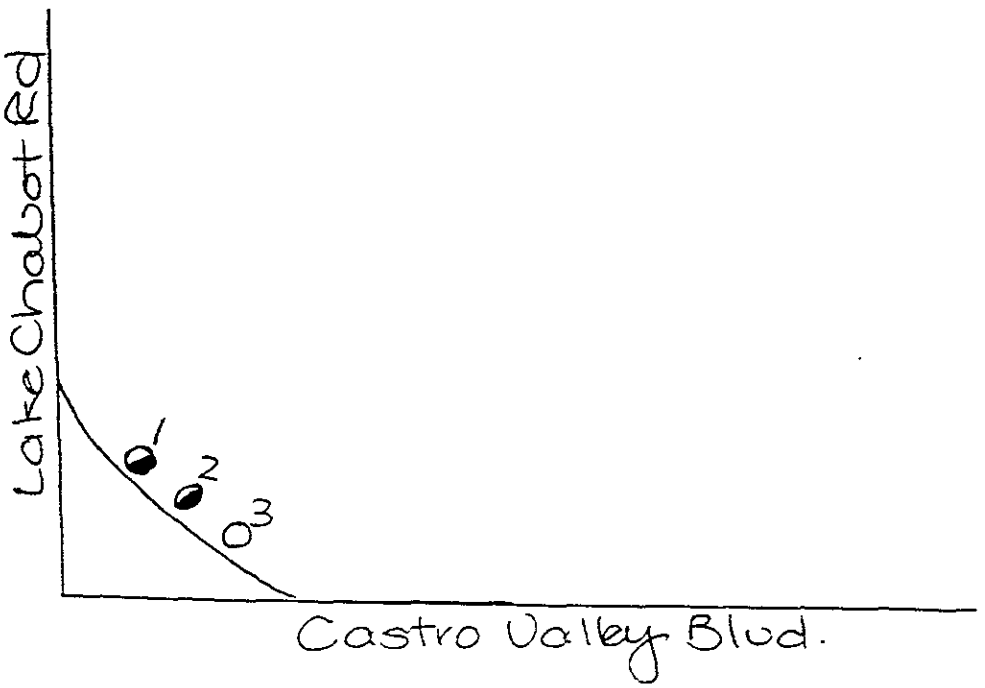
Project #: 88-44-380-20 Project Manager: CRC

Upon leaving, this site contained the following waste materials:

____ Soil Piles ____ Soil Drums 3 Water ____ Other

____ No Waste

Site Diagram



DRUM MARKINGS (If Applicable)

Diagram Drum Number	Drum Markings	Diagram Drum Number	Drum Markings	Diagram Drum Number	Drum Markings
1	COS 17E-35 gal.				
2	COS 17E-37 gal.				
3	COS 17E-empty				

c/25/90

CONVERSE ENVIRONMENTAL WEST

Well Sampling Summary

Project Name: 2724 Castro Valley
Project Number: 88-44-380-20
Date: 10/25/90
Inspector: TS

Well Number	Time	Total Depth	Depth to Water	Comments
MW-1	9:45	15.32	9.44	OUM = Ø
MW-2	9:48	14.92	9.50	OUM = Ø
MW-3	9:44	24.35	10.00	OUM = Ø
MW-5	9:40	22.80	10.12	OUM = Ø

CONVERSE ENVIRONMENTAL WEST
Water Sampling Form

Job # 88-44-380-20 Site 2724 Castro Valley Sampling Team TS

Date 10/25/90 Well #/Source MW-5 Lab Sample I.D.# _____

Field conditions sunny, warm

Describe Equipment D-Con Before Sampling This Well Alconox wash, H_2O rinse, DI

Final for H_2O probe

Describe All Meter/Equipment Calibration ph lab calibrated to 4 & 7 standard, cond. field calibrated, OVM lab calibrated to 100 ppm isob.

Total Depth of Well 22.80 Time 9:40 OVM Reading High 0 Average _____

Depth to Water Before Pumping 10.12 Product Present YES (NO) (Circle) Thickness _____

Height of Water Column (ft) 12.68 (2" .16, 3" .37, (4" .65), 6" 1.47) = Volume 8.24 * Purge Multiple 3 = Volume to Purge 24 (Gal)

Depth Purging From 22.80 ±

Time Purging Begins 10:00 Notes on Initial Discharge no odor, no sheen

Pre-Purge Sample (Check) Sheen _ Petro Odor ___ Clear ✓ Other (Describe under comments)

Time	Volume Purged	pH	Conductivity	T	Notes
10:00	pp	7.19	2500	22.0°c	see above
10:20	5	7.13	2600	21.9°c	clear no odor
10:31	10	7.07	2100	21.3°c	murky
10:45	15	7.13	2150	21.5°c	" "
10:51	20	7.20	2400	21.1°c	murky

Time	Volume Purged	pH	Conductivity	T	Notes
11:00	24	7.20	2400	21.2°c	murky
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—

Time Sample Collection Begins 11:10 Time Sample Collection Ends 11:30 Total Volume Purged 24 gal.

Depth to Water for 80% Recharge 12.65 Depth to Water After Total Purge 20.32

DTW = _____ at _____
DTW = _____ at _____
DTW = _____ at _____

DTW = _____ at _____
DTW = _____ at _____
DTW = _____ at _____

Dissolved oxygen measured? YES (NO) (circle) Barometric Pressure _____ Ambient D.O. ppm _____
Sample Temp _____ Sample D.O. _____ ppm
Comments: _____

CONVERSE ENVIRONMENTAL WEST
Water Sampling Form

Job # 88-44-380-20 Site 2724 Castro Valley Sampling Team TS

Date 10/25/90 Well #/Source MW-1 Lab Sample I.D.# 901025 (1:05)

Field conditions Sunny, warm

Describe Equipment D-Con Before Sampling This Well Alconox wash, H_2O rinse, DI Final

Describe All Meter/Equipment Calibration refer to MW-5 for info.

Total Depth of Well 15.32 Time 9:45 OVM Reading High Ø Average _____

Depth to Water Before Pumping 9.44 Product Present YES/(NO) (Circle) Thickness _____

Height of Water Column (ft) 5.88 (2" .16, 3" .37, (4" .65), 6" 1.47) = Volume 3.82 * Purge Multiple 3 = Volume to Purge 11 (Gal)

Depth Purging From 15.32 ±

Time Purging Begins 12:25 Notes on Initial Discharge no odor, no sheen

Pre-Purge Sample (Check) Sheen _ Petro Odor ___ Clear ✓ Other (Describe under comments)

Time	Volume Purged	pH	Conductivity	T	Notes	Time	Volume Purged	pH	Conductivity	T	Notes
12:25	pp	7.02	1250	23.6°c	see above						
12:40	3	7.04	1350	23.4°c	clear						
12:42	6	7.06	1400	23.3°c	" "						
12:44	9	7.06	1300	23.4°c	" "						
12:46	11	7.06	1400	23.2°c	no odor murky						

Time Sample Collection Begins 12:50 Time Sample Collection Ends 1:00 Total Volume Purged 11 gal.

Depth to Water for 80% Recharge 10.62 Depth to Water After Total Purge 11.10

DTW = [redacted] at [redacted]
DTW = _____ at _____
DTW = _____ at _____

DTW = _____ at _____
DTW = _____ at _____
DTW = _____ at _____

Dissolved oxygen measured? YES/(NO) (circle) Barometric Pressure _____ Ambient D.O. ppm _____

Sample Temp _____ Sample D.O. _____ ppm

Comments: Excellent recharge & pumped well.

CONVERSE ENVIRONMENTAL WEST
Water Sampling Form

Job # 88-44-380-20 Site 2724 Castro Valley Sampling Team TS

Date 10/25/90 Well #/Source MW-2 Lab Sample I.D.# _____

Field conditions sunny, warm

Describe Equipment D-Con Before Sampling This Well Alconox wash, H_2O rinse, DI

Final for H_2O probe

Describe All Meter/Equipment Calibration refer to MW-5 H_2O sample form for info.

Total Depth of Well 14.92 Time 9:48 OVM Reading High 0 Average _____

Depth to Water Before Pumping 9.50 Product Present YES/(NO) (Circle) Thickness _____

Height of Water Column (ft) 5.42 (2" .16, 3" .37, (4" .65), 6" 1.47) = Volume 3.52 * Purge Multiple 3 = Volume to Purge 10 (Gal)

Depth Purging From 14.92 ±

Time Purging Begins 12:00 Notes on Initial Discharge no sheen

Pre-Purge Sample (Check) Sheen _ Petro Odor very heavy ✓ Clear _ Other (Describe under comments)

Time	Volume Purged	pH	Conductivity	T	Notes
12:00	pp	7.25	1700	22.9°C	see above
12:04	3	7.11	1700	22.5°C	clear, odor
12:08	6	7.15	1750	22.1°C	" "
1:25	10	7.15	1700	21.7°C	heavy odor

Time	Volume Purged	pH	Conductivity	T	Notes

Time Sample Collection Begins 1:25 Time Sample Collection Ends 1:45 Total Volume Purged 10

Depth to Water for 80% Recharge 10.58 Depth to Water After Total Purge 12.70 @ 1:25

DTW = 13.60 at 12:15
DTW = 11.06 at 1:20
DTW = _____ at _____

DTW = _____ at _____
DTW = _____ at _____
DTW = _____ at _____

Dissolved oxygen measured? YES/(NO) (circle) Barometric Pressure _____ Ambient D.O. ppm _____
Sample Temp _____ Sample D.O. _____ ppm

Comments: Hand-bailed 2 purge.
Purged to dryness @ 7 gal.
Started purging @ 1:20, got full amt.

CONVERSE ENVIRONMENTAL WEST
Water Sampling Form

Job # 58-44380-20 Site 2724 Castro Valley Sampling Team TS

Date 10/25/90 Well #/Source MW-3 Lab Sample I.D.# _____

Field conditions sunny, warm

Describe Equipment D-Con Before Sampling This Well Alconox wash, H2O rinse, DI Final for H2O probe

Describe All Meter/Equipment Calibration refer to MW-5 for info.

Total Depth of Well 24.35 Time 9:44 OVM Reading High Ø Average _____

Depth to Water Before Pumping 10.00 Product Present YES (NO) (Circle) Thickness _____

Height of Water Column (ft) 14.35 2" .16 3" .37 (4" .65) 6" 1.47 = Volume 9.32 * Purge Multiple 3 = Volume to Purge 27 (Gal)

Depth Purging From 24.35±

Time Purging Begins 2:15 Notes on Initial Discharge no sheen, no odor

Pre-Purge Sample (Check) Sheen _ Petro Odor _ Clear ✓ Other (Describe under comments)

Time	Volume Purged	pH	Conductivity	T	Notes
2:15	pp	7.14	1750	24.3°C	see above
2:23	10	7.28	1750	23.5°C	clear
2:30	15	7.23	3300	22.4°C	clear
2:40	20	7.22	3300	22.4°C	clear
2:47	27	7.23	3250	22.6°C	no odor murky

Time	Volume Purged	pH	Conductivity	T	Notes

Time Sample Collection Begins 3:00 Time Sample Collection Ends 3:30 Total Volume Purged 27 gal

Depth to Water for 80% Recharge 12.87 Depth to Water After Total Purge 18.32

DTW = _____ at _____
DTW = _____ at _____
DTW = _____ at _____

DTW = _____ at _____
DTW = _____ at _____
DTW = _____ at _____

Dissolved oxygen measured? YES (NO) (circle) Barometric Pressure _____ Ambient D.O. ppm _____

Sample Temp _____ Sample D.O. _____ ppm

Comments: Well went low, fairly quickly. Hand bailed rest of bail after 20 gal.