



September 28, 1990
88-44-380-20-910

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 - Q3/1990
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 3, 1990 prepared by Converse Environmental West (CEW) - San Francisco.

Please call if you have any questions.

Very truly yours,

Converse Environmental West



Michael Carey
Project Geologist

Enclosure

cc: Mr. Lawrence Seto - Alameda County Health Care Services Agency
Mr. Charles R. Comstock - Converse Environmental West

**REPORT OF ACTIVITIES
QUARTER 3, 1990**

**SHELL OIL COMPANY FACILITY
2724 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA**

Prepared for:

Shell Oil Company
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Prepared by:

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September 28, 1990

CEW Project No. 88-44-380-20

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SECTION 1

INTRODUCTION

1.1 BACKGROUND AND OBJECTIVES

This report presents the results of investigative activities conducted by Converse Environmental West (CEW) during Quarter 3, 1990 (Q3/90) for the former Shell Oil Company (Shell) station (site) 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 facility. 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 dwellings are located on nearby side streets. The site was an active service station before 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 Hayward, Calif 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 former Shell gasoline station at the subject address. Environmental activities were 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 II 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, and taken to a Class I or II landfill at Buttonwillow, California, by Crosby and Overton, a licensed waste hauler. Verification samples taken in the sidewalls showed that the exposed soils were clean, 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 near-surface contamination 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 taken in January 1990 showed that the exposed soils were clean. 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 [REDACTED]s 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 Q3/90 were authorized under an existing purchase order and blanket number from Shell for environmental services at the site. The work completed during Q3/90 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) and total petroleum hydrocarbons (TPH-g and TPH-d). Monitoring well MW-2 was also analyzed for waste oil parameters (EPA Method 624).
- 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 Q3/90 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 was backfilled with compacted granular soil, by Paradiso Construction Company, Oakland, California.

2.2 GROUNDWATER INVESTIGATIONS

2.2.1 Groundwater Sampling and Analyses

Groundwater samples were collected on July 31, 1990 from monitoring wells MW-1 through MW-3, and MW-5 following CEW protocols. These samples were submitted to NET Pacific, Inc., a California-certified laboratory in Santa Rosa, California, under proper chain-of-custody. All water samples were analyzed for TPH-g, TPH-d, and BTEX following the recommended analytical methods listed in Table 3. Water samples from MW-2 were also analyzed for waste oil parameters (EPA Method 624). Analytical data for the water samples collected from the monitoring wells are summarized in Table 7. Laboratory reports and chain-of-custody forms are provided in Appendix D.

2.2.2 Physical Monitoring Activities

During Q3/90, wells MW-1 through MW-3 and MW-5 were physically measured once for depth to water table and the presence of floating product. A summary of these results is presented 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 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 of soil stratigraphy established during excavations (CEW, January 16, 1990). Petroleum odor from the Soil Horizon I zone was observed during excavation and sampling around 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 <6" thick, discontinuous), which extend to approximately 9 to 11 feet bgs; this interval is "Soil Horizon II" of prior reports.

Immediately below Soil Horizon II exist discontinuous, thin (< 3 feet thick) lenses of saturated, poorly-sorted sand, gravel silt and clay; this interval is "Soil Horizon III" of excavation stratigraphy. 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 the maximum depth of exploration, 25 feet below grade (Drawing 6). 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 low levels of petroleum hydrocarbons, BTEX and lead (Table 4).

3.1.3 Discussion

At present, minor residual contamination remains near the waste oil tank. Contaminated soil has been removed by excavation at the center of the site, to clean sidewalls (complete practical lateral extent) and to the capillary zone (winter, 1989 vertical extent).

3.2 GROUNDWATER

3.2.1 Physical Parameters

Reported Q1/90

Neither floating product or hydrocarbon odors were present in the wells.

Reported Q2/90

Floating product was not present in the wells at the facility during Q2/90 monitoring activities, minor petroleum odor was observed in MW-2.

Reported Q3/90

Floating product was not present in the wells at the facility during Q2/90 monitoring activities, minor petroleum odor was observed in MW-2.

3.2.2 Elevation and Gradient

Reported Q1/90

The groundwater gradient is approximately 0.03 ft/ft to 0.01 ft/ft with flow south to the south across the site.

Reported Q2/90

Depth to groundwater ranges from 8.63 to 10.20 ft bgs (Table 7). Groundwater flow is to the southwest with a gradient of approximately 0.02 to .01 ft/ft (Drawing 4).

Reported Q3/90

Depth to groundwater ranges from 8.78 to 10.61 ft bgs (Table 7). Groundwater flow is to the south with a gradient of approximately 0.03 to .01 ft/ft (Drawing 4).

3.2.3 Results of Chemical Analyses

Reported Q1/90

TPH-g and BTEX were below detectable concentrations in MW-3 and MW-5. MW-1 contained trace amounts of benzene and toluene, and MW-2 contained detectable concentrations of BTEX, TPH-g and TPH-d. No evidence of pesticides or chlorinated hydrocarbons was observed in the groundwater.

Reported Q2/90

Only MW-2 contained detectable amounts of TPH-g (9.1 mg/Kg), TPH-d (1.8 mg/Kg) or BTEX (0.50, 0.33, 0.11, 0.90 mg/Kg, respectively) (Table 6, Drawing 5 and Drawing 6). Concentrations of these constituents in MW-2 was similar in both Q1/90 and Q2/90. No evidence of chlorinated hydrocarbons was observed in groundwater.

Reported Q3/90

Only MW-2 contained detectable amounts of TPH-g (5.3 mg/Kg), TPH-d (0.6 mg/Kg) or BTEX (0.55, 0.038, <.0005, .29 mg/Kg, respectively) (Table 6, Drawing 5 and Drawing 6). Concentrations of these constituents in MW-2 was similar but slightly higher in both Q1/90 and Q2/90. No evidence of chlorinated hydrocarbons was observed in groundwater.

3.2.4 Physical Monitoring

The four wells were monitored once during the quarter for groundwater conditions, at the time of sampling. No free product sheen was present in groundwater samples in July, 1990 (Table 7).

3.2.5 Discussion

Groundwater monitoring well MW-2 continues to show the presence of low levels of TPH-g and TPH-d. Volatile organic constituents (EPA Method 624), with the exception of BTEX compounds, have not been detected at MW-2. Wells MW-1, MW-3 and MW-5 continue to show that these constituents are below detectable limits at their respective locations.

SECTION 4

NEXT QUARTER ACTIVITIES

A detailed description of planned activities is contained in the Site Restoration Plan and Schedule, dated May 31, 1990. Pending approval of this plan by the ACHCSA, planned Q4/90 activities include drilling one additional onsite soil boring, near the waste oil tank and removal of the tank and surrounding contaminated soil. The initiation of off-site activities described in the plan will be dependent on right of entry approval. Sampling and chemical analysis will be continued at the existing four monitoring wells.

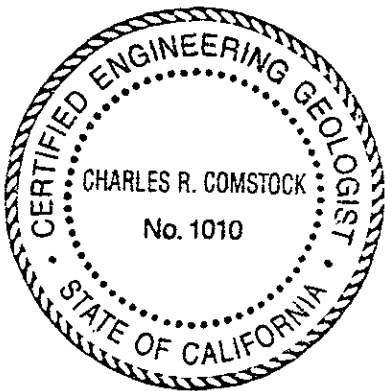
CEW will describe and report progress of activities on the next Q4/90 Quarterly Report to the agency.

CERTIFICATION

This report of activities for the Shell Oil Company facility at 2724 Castro Valley Road, 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

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2724 Castro Valley Road
Castro Valley, California

Quarter 3, 1990

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- Converse Environmental West, 1989, Revised Work Plan, Shell Oil Company facility, 2724 Castro Valley Road, Castro Valley, California, dated January 16, 1990.
- Helley, E.J., La Joie, K.R., Spangle, W.E., and Blair, M.L., 1979, Flatland deposits of the San Francisco Bay Region, California - their geology and engineering properties, and their importance to comprehensive planning, U.S. Geological Survey Professional Paper 943, 88 p.
- Hickenbottom, K. and Muir, K., 1988. Geohydrology and groundwater - quality overview, of the East Bay Plain area, Alameda County, California 205(j) Report, Alameda County Flood Control and Water Conservation District, 83p. plus appendix.

TABLE 1. ACTIVITY SUMMARY - QUARTER 3, 1990

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

Activity	PERCENT COMPLETE			
	Quarter 3, 1990		Total to Date	
	Onsite	Offsite	Onsite	Offsite
Soil Characterization	0	N/A	90	NA
Groundwater Characterization (Dissolved Product)	10	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

Shell Oil Company Facility
 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
 ppm part per million
 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	
<u>Unknown Fuel</u>	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
<u>Leaded Gas</u>	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
<u>Unleaded Gas</u>	TPH-g	GCFID (5030)	TPH-g	GCFID (5030)
	BTEX	8020 or 8240	BTEX	602, 624 or 8260
	TPH & BTEX	8260		
<u>Diesel</u>	TPH-d	GCFID (3550)	TPH-d	GCFID (3510)
	BTEX	8020 or 8240	BTEX	602, 624 or 8260
	TPH & BTEX	8260		
<u>Jet Fuel</u>	TPH-d	GCFID (3550)	TPH-d	GCFID (3510)
	BTEX	8020 or 8240	BTEX	602, 624 or 8260
	TPH & BTEX	8260		
<u>Kerosene</u>	TPH-d	GCFID (3550)	TPH-d	GCFID (3510)
	BTEX	8020 or 8240	BTEX	602, 624 or 8260
<u>Fuel/Heating Oil</u>	TPH-d	GCFID (3550)	TPH-d	GCFID (3510)
	BTEX	8020 or 8240	BTEX	602, 624 or 8260
<u>Chlorinated Solvents</u>	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
<u>Non Chlorinated Solvents</u>	TPH-d	GCFID (3550)	TPH-d	GCFID (3510)
	BTEX	8020 or 8240	BTEX	602 or 624
	TPH & BTEX	8260	TPH & BTEX	8260
<u>Waste and Used Oil or Unknown</u>	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 DOWNHOLE SOIL CHEMICAL ANALYSES (mg/kg)

Shell Oil Company Facility
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		5/9/90	<1.0			<2.5	<2.5	3.9		
SB-2-3A ⁷		5/9/90	<1.0			<2.5	<2.5	<2.5	<2.5	

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
- Bold** Samples analyzed this quarter

TABLE 5. WELL INSTALLATION INFORMATION

Shell Oil Company Facility
 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

**Shell Oil Company Facility
2724 Castro Valley Road
Castro Valley, California**

Well No.	Date Sampled	Concentration (mg/L)					
		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	<.05	NS	<0.0005	<0.0005	<0.0005	<0.0005
MW-1	07/31/90	<.05	NS	<0.0005	<0.0005	<0.0005	<0.0005
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	.330	0.110	0.900
MW-2	07/31/90	5.3	0.6	.550	.038	<.0005	.280
MW-3	02/09/90	<1.0	NS	<0.0005	<0.0005	<0.0005	<0.0005
MW-3	04/20/90	<.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-5	02/09/90	<1.0	NS	<0.0005	<0.0005	<0.0005	<0.0005
MW-5	04/20/90	<.05	NS	<0.0005	<0.0005	<0.0005	<0.0005
MW-5	07/31/90	<.05	NS	<0.0005	<0.0005	<0.0005	<0.0005

NOTES:

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

TABLE 7. GROUNDWATER MONITORING INFORMATION

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

Well No.	Date Monitored	Depth to Water (ft bgs)	Petroleum Odor In Water	Floating Product Thickness (inches)	Comments
MW-1 El. 99.78'	02/08/90	8.39	NS	NS	---
	04/20/90	9.21	NS	NS	---
	07/30/90	9.21	NS	NS	---
MW-2 El. 100.83'	02/08/90	7.33	NS	NS	---
	04/20/90	8.63	NS	NS	---
	07/30/90	8.78	NS	NS	---
MW-3 El. 101.48'	02/08/90	8.91	NS	NS	---
	04/20/90	10.20	NS	NS	---
	07/30/90	10.61	NS	NS	---
MW-5 El. 99.90'	02/08/90	8.80	NS	NS	---
	04/20/90	9.35	NS	NS	---
	07/30/90	9.49	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

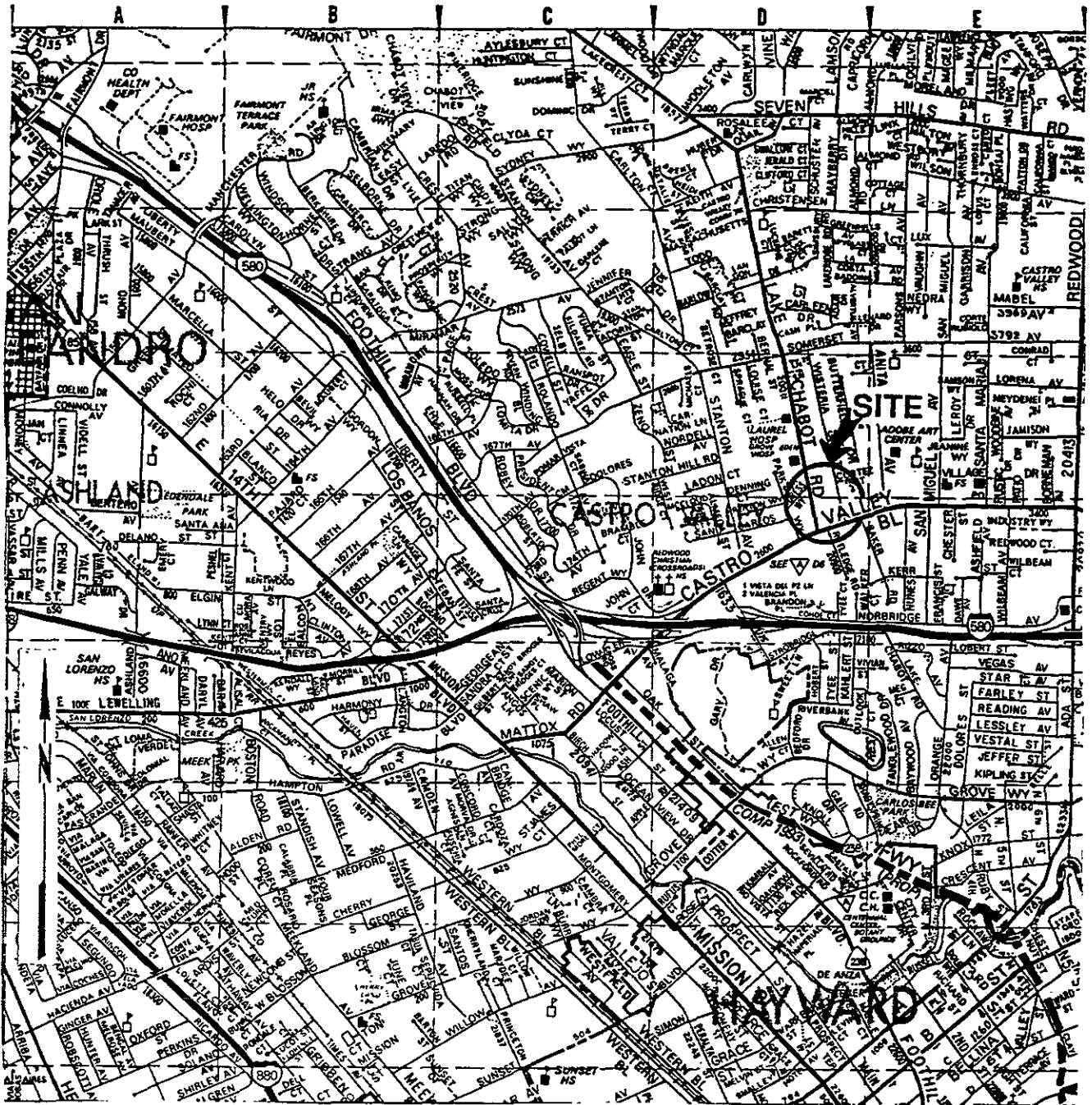
TABLE 8. FIELD PARAMETERS

Shell Oil Company Facility
 2724 Castro Valley Blvd.
 Castro Valley, California

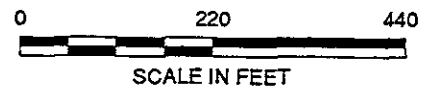
Well Number	Date Sampled	Time	Purge Method	Total Gallons Purged	pH (pH units)	Conductivity (µmhos)	Temperature (° C)	Notes
MW-1	07/31/90	4:05	Hand Bailed	NM				
		4:15	Hand Bailed	4	6.83	140	24	Clear, no odor
		4:17	Hand Bailed	76	6.80	140	24	No odor
		4:19	Hand Bailed	10	6.81	140	24	Clear
		4:20	Hand Bailed	12	6.80	140	24	No debris
MW-2	07/31/90	2:45	Hand Bailed	NM				
		3:00	Hand Bailed	4	7.61	110	22	Clear, odor
		3:03	Hand Bailed	7	7.76	111	22	Odor, debris
		3:07	Hand Bailed	10	7.19	110	21	Odor
		3:35	Hand Bailed	12	7.19	111	22	Odor
MW-3	07/31/90	4:47	Cent. Pump	NM				Clear
		5:00	Cent. Pump	10	7.51	180	25	Clear, no odor
		5:10	Cent. Pump	15	4.46	300	24	Clear
		5:15	Cent. Pump	20	7.48	300	24	Clear
		5:20	Cent. Pump	25	7.45	308	24	Clear
		5:24	Cent. Pump	27	7.45	300	27	Clear
MW-5	07/31/90	12:55	Cent. Pump	NM				
		1:16	Cent. Pump	10	7.40	250	23	Murky
		1:25	Cent. Pump	15	7.34	230	24	No sheen
		1:50	Cent. Pump	20	7.26	230	23	Murky
		2:10	Cent. Pump	26	7.34	240	23	Sheen, murky

NOTE:

NM none measured



SOURCE: Thomas Brothers Maps, 1989.



SITE LOCATION MAP

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

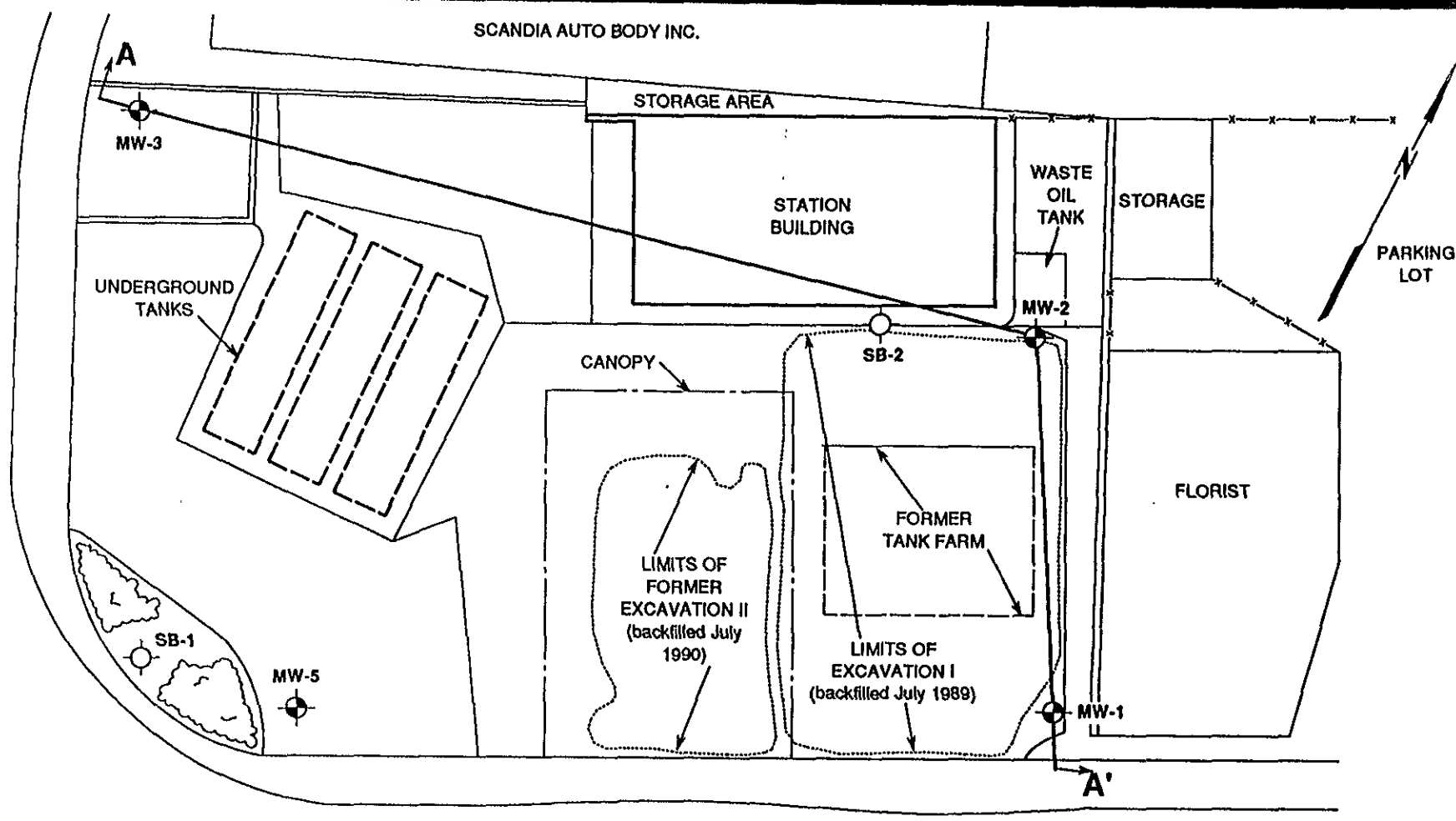
Scale	AS SHOWN	Project No.	89-44-380-20
Prepared by	LQL	Date	6/8/90
Checked by	MCC	Drawing No.	
Approved by	CRC		1



Converse Environmental West

LAKE CHABOT ROAD

SCANDIA AUTO BODY INC.



CASTRO VALLEY BLVD.



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.

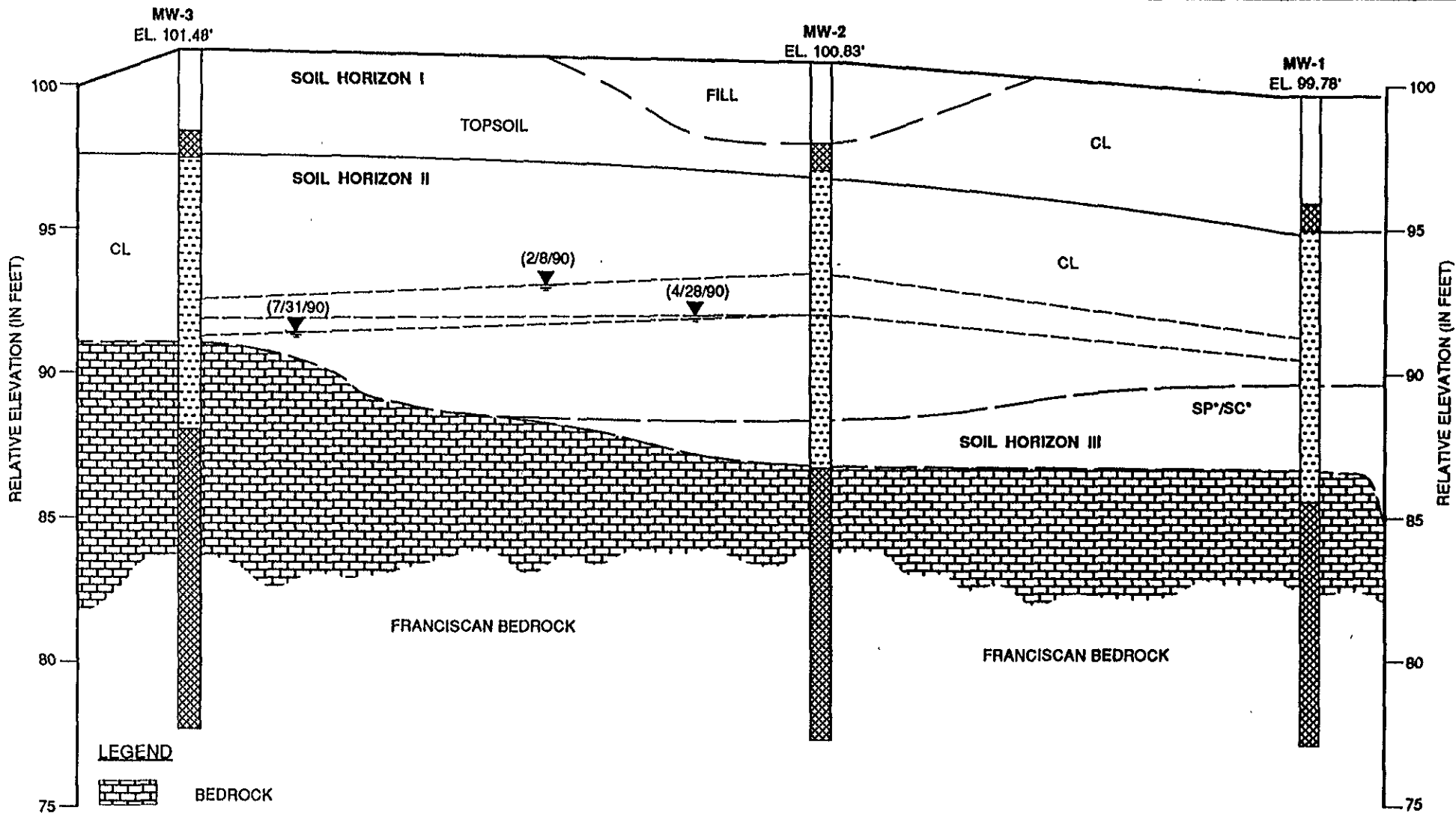
PLOT PLAN

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

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		



Converse Environmental West



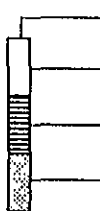
LEGEND



BEDROCK



STATIC GROUNDWATER ELEVATION



MONITORING WELL/BORE HOLE

Blank Casing

Screen Casing

Bentonite Backfill

* WITH SHALE FRAGMENTS (PALEOREGOLITH ?)

SCHEMATIC GEOLOGIC CROSS SECTION A-A'

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

Scale
NOT TO SCALE

Prepared by
LQL/DEN

Checked by
MCC

Approved by
CRC

Project No.
88-44-300-20

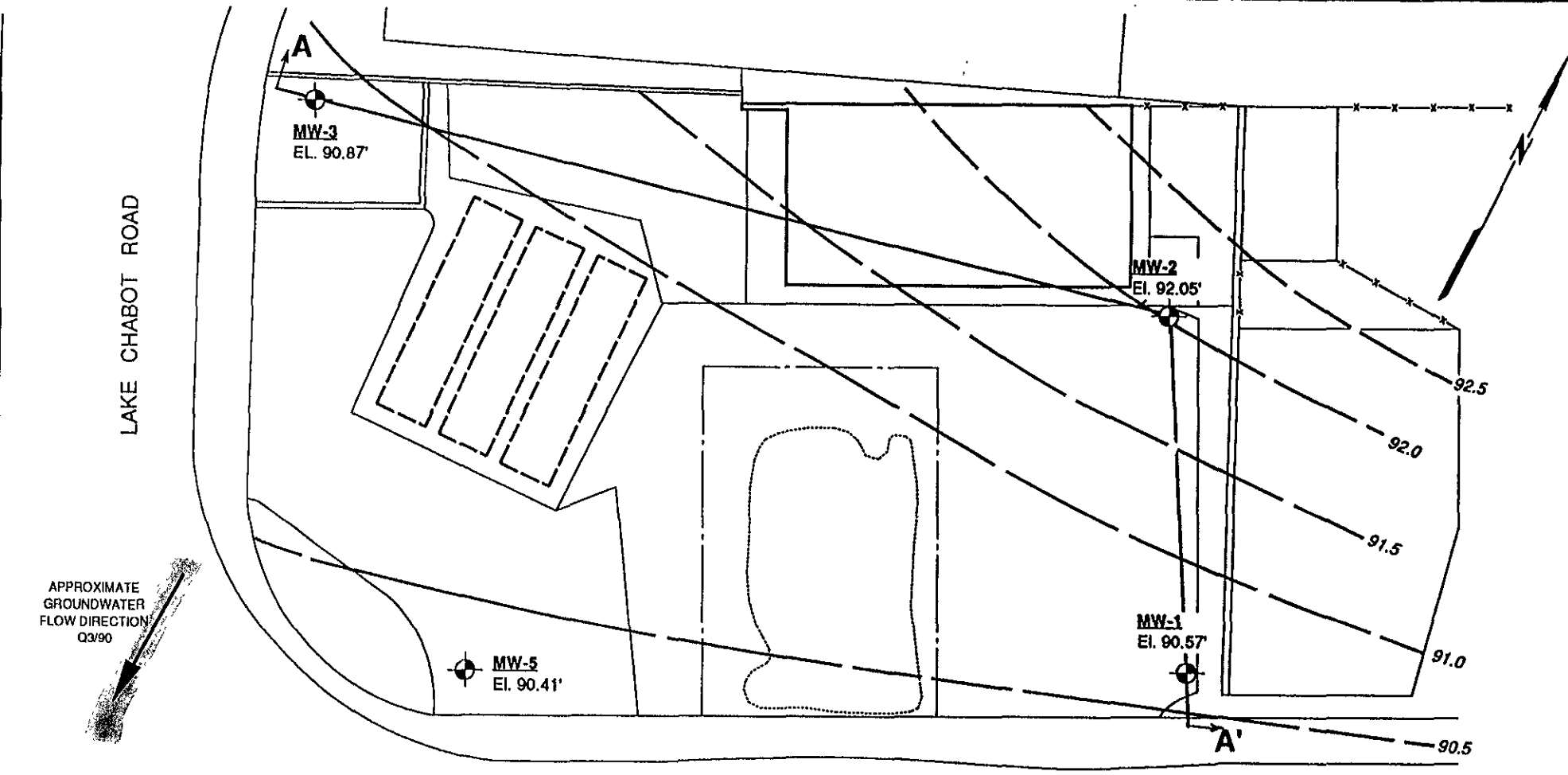
Date
9/25/90

Drawing No.

3



Converse Environmental West



APPROXIMATE
GROUNDWATER
FLOW DIRECTION
Q3/90

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

CASTRO VALLEY BLVD.



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

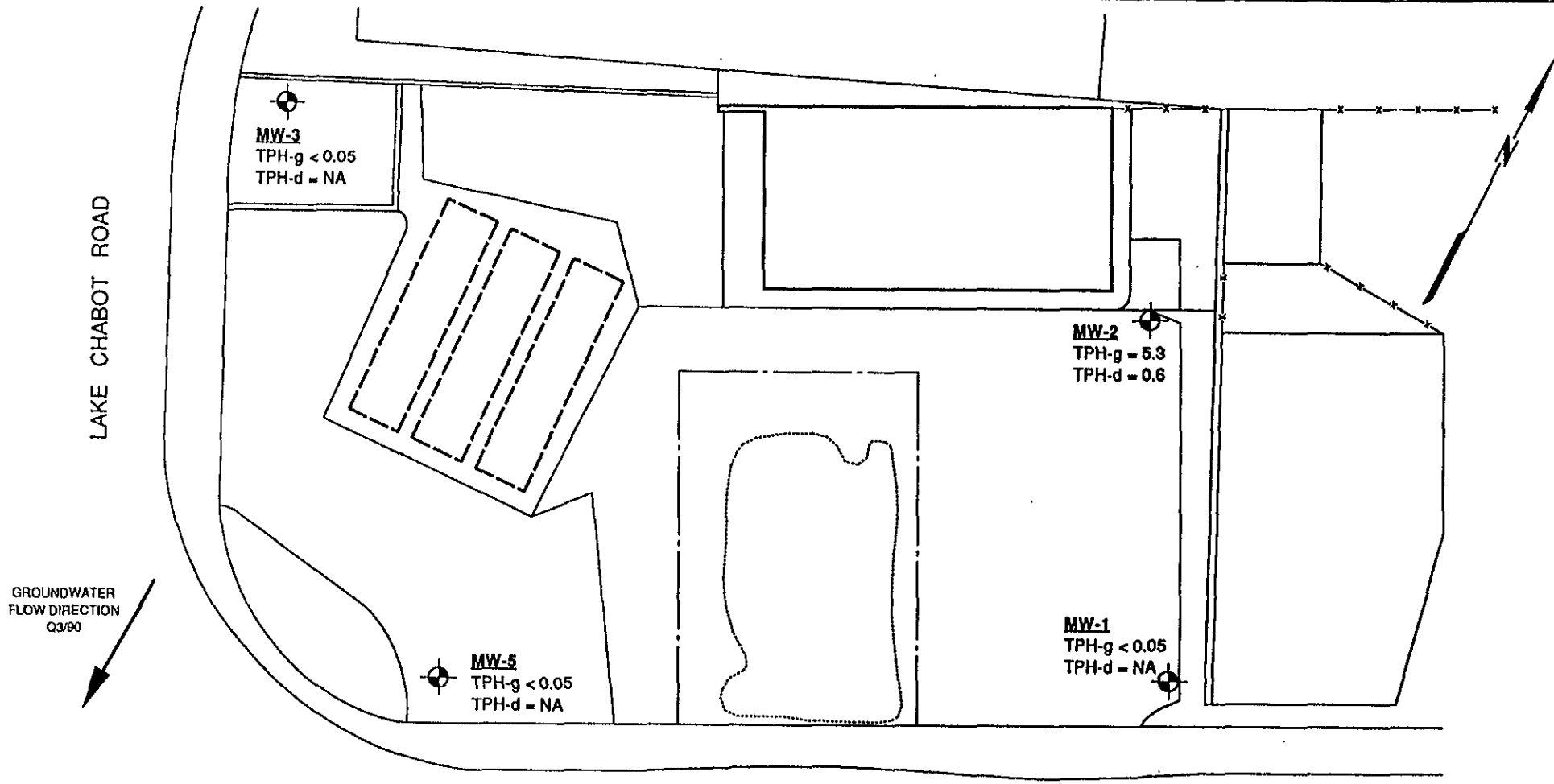
GROUNDWATER CONTOUR MAP Q3/90

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California


Scale	AS SHOWN	Project No.	88-44-380-20
Prepared by	DEN	Date	9/25/90
Checked by	MCC	Drawing No.	
Approved by	CRC		4



Converse Environmental West



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

CASTRO VALLEY BLVD.



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

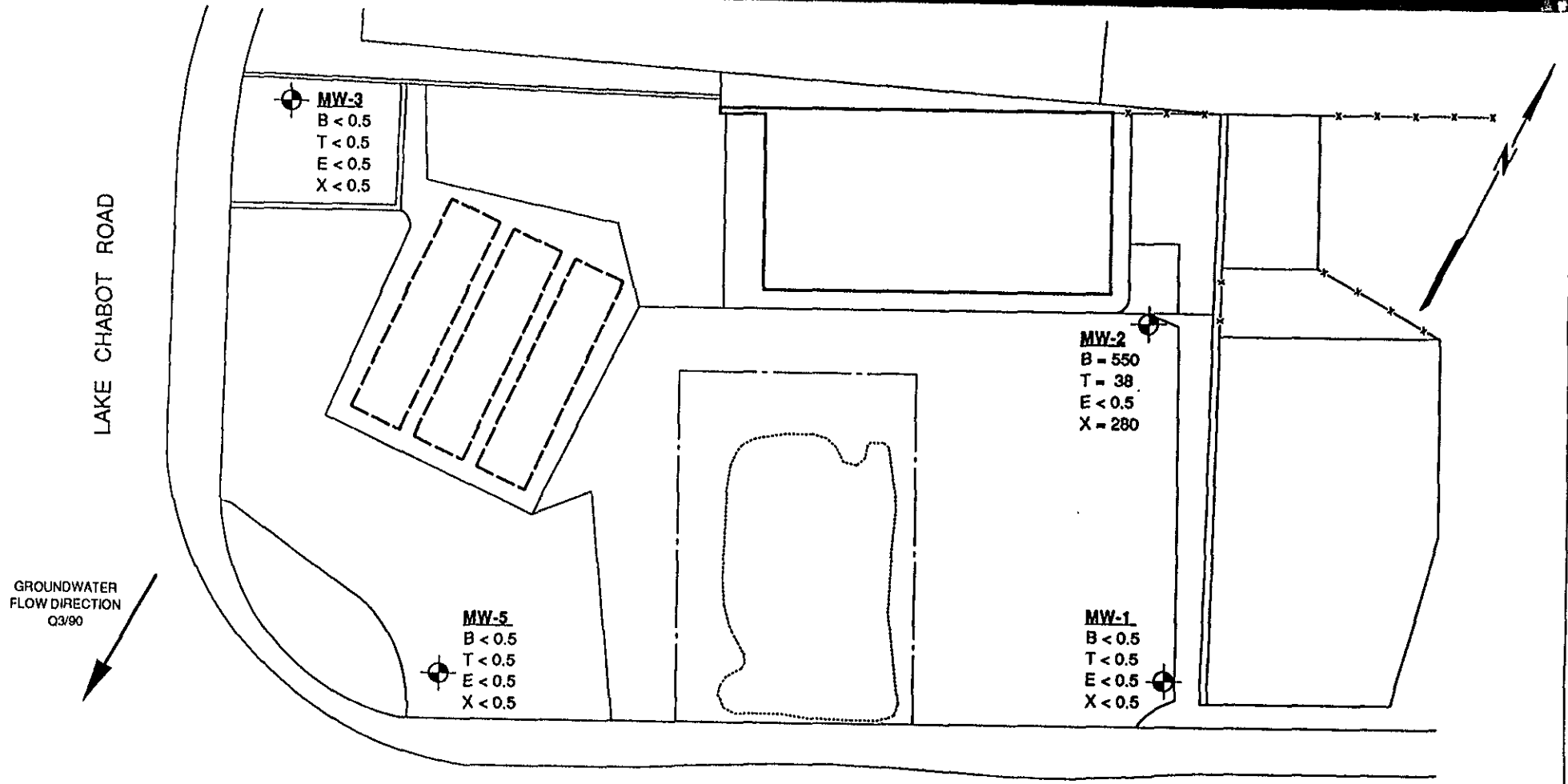
PLAN: GROUNDWATER TPH-g AND TPH-d Q3/90

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	Date	9/25/90
Checked by	MCC	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)

CASTRO VALLEY BLVD.



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

PLAN GROUNDWATER RPT EX Q3/90

SHELL OIL COMPANY
2724 Castro Valley Boulevard
Castro Valley, California

Scale	AS SHOWN	Project No.	88-44-380-20
Prepared by	DEN	Date	9/25/90
Checked by	MCC	Drawing No.	6
Approved by	CRC		



Converse Environmental West

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 images 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, which 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 are 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.

<u>Date</u>	<u>Description of Activity</u>
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. Attachment 2.
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. Attachment 3.
03/31/89	Field sampling in the vicinity of the new tank hole was performed. Attachment 4.
05/05/89	Converse Environmental West (CEW) was retained by Shell Oil Co to supervise environmental activities at the site.
06/12/89	Samples SW-1 through SW-7 were collected.
07/05/89	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 Agency.
07/27/89	CEW sent an "Addendum to July 11, 1989 Interim Sampling Report and Recommendations" to the Alameda County Health Agency.
08/30/89	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 10:26 were collected.
10/31/89	CEW sent a report titled "Soil Sampling Report" to the Alameda County Health Agency.
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)

<u>Date</u>	<u>Description of Activity</u>
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 0.1 and grease.
3/12/90	CEW requested permission from ACHCSA to backfill the existing excavation onsite.
01/18/90- 01/23/90	Drilled 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 EPA 608, (Pesticides), oil and grease, metals.
3/12/90	CEW requested permission from ACCHCSA 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, ACCHCSA and Rheghetti meet at site to discuss backfilling of the existing excavation.
5-2-90	Shell received permission from ACCHCSA 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.

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

RECEIVED

AUG 10 1990

CONVERSE ENVIRONMENTAL

Michael Carey
Converse Consultants
55 Hawthorne St, Ste 500
San Francisco, CA 94105

Date: 08-09-90
NET Client Acct. No: 18.02
NET Pacific Log No: 3115
Received: 08-01-90 0800

Client Reference Information

SHELL- 2724 Casto 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

Enclosure(s)

Client Acct: 18.02
Client Name: Converse Consultants
NET Log No: 3115

Date: 08-09-90
Page: 2

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

SAMPLE DESCRIPTION: MW-3 07-31-90 0848
 LAB Job No: (-58954)

Parameter	Method	Reporting Limit	Results	Units	
PETROLEUM HYDROCARBONS			--		
VOLATILE (WATER)			--		
DILUTION FACTOR *			1		
DATE ANALYZED			08-02-90		
METHOD GC FID/5030			--		
as Gasoline			0.05	ND	mg/L
METHOD 602			--		
DILUTION FACTOR *			1		
DATE ANALYZED			08-02-90		
Benzene			0.5	ND	ug/L
Ethylbenzene			0.5	ND	ug/L
Toluene			0.5	ND	ug/L
Xylenes, total			0.5	ND	ug/L

Client Acct: 18.02
Client Name: Converse Consultants
NET Log No: 3115

Date: 08-09-90
Page: 3

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

SAMPLE DESCRIPTION: MW-5 07-31-90 0930
LAB Job No: (-58955)

Parameter	Method	Reporting Limit	Results	Units	
PETROLEUM HYDROCARBONS			--		
VOLATILE (WATER)			--		
DILUTION FACTOR *			1		
DATE ANALYZED			08-02-90		
METHOD GC FID/5030			--		
as Gasoline			0.05	ND	mg/L
METHOD 602			--		
DILUTION FACTOR *			1		
DATE ANALYZED			08-02-90		
Benzene			0.5	ND	ug/L
Ethylbenzene			0.5	ND	ug/L
Toluene			0.5	ND	ug/L
Xylenes, total			0.5	ND	ug/L

Client Acct: 18.02
Client Name: Converse Consultants
NET Log No: 3115

Date: 08-09-90
Page: 5

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

SAMPLE DESCRIPTION: 90731 07-31-90 1000
LAB Job No: (-58957)

Parameter	Method	Reporting Limit	Results	Units	
PETROLEUM HYDROCARBONS			--		
VOLATILE (WATER)			--		
DILUTION FACTOR *			1		
DATE ANALYZED			08-02-90		
METHOD GC FID/5030			--		
as Gasoline			0.05	ND	mg/L
METHOD 602			--		
DILUTION FACTOR *			1		
DATE ANALYZED			08-02-90		
Benzene			0.5	0.8	ug/L
Ethylbenzene			0.5	ND	ug/L
Toluene			0.5	ND	ug/L
Xylenes, total			0.5	ND	ug/L

Client Acct: 18.02
Client Name: Converse Consultants
NET Log No: 3115

Date: 08-09-90
Page: 6

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

SAMPLE DESCRIPTION: MW-2 07-31-90 1025
 LAB Job No: (-58958)

Parameter	Method	Reporting Limit	Results	Units
Oil & Grease(Total)	413.1	5	ND	mg/L
Oil & Grease(Non-Polar)	SM503A/E	10	ND	mg/L
PETROLEUM HYDROCARBONS			--	
VOLATILE (WATER)			--	
DILUTION FACTOR *			20	
DATE ANALYZED			08-03-90	
METHOD GC FID/5030			--	
as Gasoline		0.05	5.3	mg/L
METHOD 602			--	
DILUTION FACTOR *			20	
DATE ANALYZED			08-03-90	
Benzene		0.5	550	ug/L
Ethylbenzene		0.5	ND	ug/L
Toluene		0.5	38	ug/L
Xylenes, total		0.5	280	ug/L
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (WATER)			--	
DILUTION FACTOR *			1	
DATE EXTRACTED			08-02-90	
DATE ANALYZED			08-02-90	
METHOD GC FID/3510			--	
as Diesel		0.05	0.60	mg/L
as Motor Oil		0.5	ND	mg/L

Client Acct: 18.02
Client Name: Converse Consultants
NET Log No: 3115

Date: 08-09-90
Page: 8

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

SAMPLE DESCRIPTION: Trip Blank 07-31-90 1030
LAB Job No: (-58959)

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (WATER)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			08-02-90	
METHOD GC FID/5030			--	
as Gasoline		0.05	ND	mg/L
METHOD 602			--	
DILUTION FACTOR *			1	
DATE ANALYZED			08-02-90	
Benzene		0.5	ND	ug/L
Ethylbenzene		0.5	ND	ug/L
Toluene		0.5	ND	ug/L
Xylenes, total		0.5	ND	ug/L
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (WATER)			--	
DILUTION FACTOR *			1	
DATE EXTRACTED			08-02-90	
DATE ANALYZED			08-02-90	
METHOD GC FID/3510			--	
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L

Client Acct: 18.02
Client Name: Converse Consultants
NET Log No: 3115

Date: 08-09-90
Page: 9

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

SAMPLE DESCRIPTION: Field Blank 07-31-90 1035
LAB Job No: (-58960)

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (WATER)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			08-02-90	
METHOD GC FID/5030			--	
as Gasoline		0.05	ND	mg/L
METHOD 602			--	
DILUTION FACTOR *			1	
DATE ANALYZED			08-02-90	
Benzene		0.5	ND	ug/L
Ethylbenzene		0.5	ND	ug/L
Toluene		0.5	ND	ug/L
Xylenes, total		0.5	ND	ug/L
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (WATER)			--	
DILUTION FACTOR *			1	
DATE EXTRACTED			08-02-90	
DATE ANALYZED			08-02-90	
METHOD GC FID/3510			--	
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L

Ref: SHELL- 2724 Casto 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	70	ND	ND	58	N/A
Motor Oil	0.5	mg/L	176	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	96	ND	94	103	8.9
Benzene	0.5	ug/L	100	ND	97	100	3.4
Toluene	0.5	ug/L	99	ND	96	97	1.4

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
Gasoline	0.05	mg/L	105	ND	86	100	15
Benzene	0.5	ug/L	98	ND	81	88	7.4
Toluene	0.5	ug/L	97	ND	86	94	8.5

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	6.0	ug/L	109	ND	96	99	3.3
1,1-Dichloroethene	2.8	ug/L	117	ND	99	98	<1
Toluene	6.0	ug/L	110	ND	91	96	5.7
Trichloroethene	1.9	ug/L	113	ND	80	80	<1

COMMENT: Blank Results were ND on other analytes tested.

KEY TO ABBREVIATIONS and METHOD REFERENCES

- < : Less than; When appearing in results column indicates analyte not detected at the value following, which supercedes the listed reporting limit.
- mean : Average; sum of measurements divided by number of measurements.
- mg/Kg (ppm) : Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (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, $100 \text{ [Value 1 - Value 2] / mean value}$.
- SNA : Standard not available.
- ug/Kg (ppb) : Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
- ug/L : Concentration in units of micrograms of analyte per liter of sample.
- urnos/cm : Microthos per centimeter.

Method References

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.

- * 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.



NATIONAL
ENVIRONMENTAL
TESTING, INC.

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

Requirements for Sample Submittal

Our policy with all clients requires that liquid samples be submitted as three containers per analysis (or combination analyses) per sample. This requirement exists for three reasons:

- 1) The occasional need to re-analyze samples when the initial analysis is not satisfactory (e.g. matrix interferences, instrument failure, etc),
- 2) The need for sufficient sample to perform quality control procedures, including sample spike and duplicate sample analyses,
- 3) The occasional instance when there is a problem sample (e.g., VOA submitted with headspace, sample preserved improperly, sample broken during handling).

To routinely produce high quality data and consistently meet reporting commitments at a competitive price, as NET does, we need your cooperation with these sample submittal requirements. Failure to adhere to these guidelines will, in general, limit NET's liability to the cost of the sample analysis. Please encourage your staff to contact their NET Client Services Representative any time they need advice pertaining to the required number of sample containers and/or types of analyses necessary.

3115 Mike (L) 9/1/90

PROJECT NO.: 88-44-380-20				PROJECT NAME / CROSS STREET: SHELL 2724 Castro Valley Blvd				NUMBER OF CONTAINERS	ANALYSES					REMARKS		
SAMPLERS: (Signature) Tina Soerksen				STATION NO.	DATE	TIME	COMP.		GRAB	STATION LOCATION	Tph-g	BTEX	Tph-d		Oil + Grease	624(CL/HC)
MW-3	7/31/90	8:48						✓			40 ml. VOA's	4	✓	✓		
MW-5	7/31/90	9:30		✓	40 ml. VOA's	3	✓	✓								
MW-1	7/31/90	9:50		✓	40 ml. VOA's	3	✓	✓								
900731	7/31/90	10:00		✓	40 ml. VOA's	3	✓	✓							Detection Limits	
MW-2	7/31/90	10:25		✓	1 litre Ambers	4			✓	✓						
MW-2	7/31/90	10:25		✓	40 ml. VOA's	4	✓	✓				✓			Tph-g = 0.05 ppm Tph-d = 0.05 ppm Oil + Grease = 10 ppm BTEX = 0.5 ppb CL/HC = 0.5 ppb	
Trip Blank	7/31/90	10:30		✓	1 litre Amber	1			✓	✗						
Trip Blank	7/31/90	10:30		✓	40 ml. VOA's	1	✓	✓				✗				
Field Blank	7/31/90	10:35		✓	1 litre Amber	1			✓	✗						
Field Blank	7/31/90	10:35		✓	40 ml. VOA	1	✓	✓				✗				

per MC by 7/31/90

custody seal intact by 8/1
custody seal 7/31/90 @ 19:30

RELINQUISHED BY: (Signature) Tina Soerksen	DATE: 7/31/90 TIME: 17:55	RECEIVED BY: (Signature) Jeff Winkler	RELINQUISHED BY: (Signature) Jeff Winkler	DATE: 7/31/90 TIME:	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE: 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 (via wcs)		SHIPPED BY: (Signature)	RECEIVED FOR LAB: (Signature) K. Sample	DATE: 8-1-90 TIME: 0800	COURIER FROM AIRPORT: (Signature)

APPENDIX D
FIELD DATA

CONVERSE ENVIRONMENTAL WEST
Water Sampling Form

Job # 88-44-380-20 Site 2724 Castro Valley Sampling Team T.S.
Date 7/30/90 Well #/Source MW-5 Lab Sample I.D.# _____

Field conditions Sunny, warm
Describe Equipment D-Con Before Sampling This Well Alconox wash, H₂O rinse, DI Final

Describe All Meter/Equipment Calibration ph lab calibrated to 4:00 ± 7.00 standards, conductivity field calibrated to standards, OUM lab calibrated to 100 ppm isob standards

Total Depth of Well 22.80 Time 12:20 OVM Reading High 6 Average .2

Depth to Water Before Pumping 9.49 Product Present YES/NO (Circle) Thickness _____

Height of Water Column (ft) 13.31 ^{2"}.16 ^{3"}.37 ^{4"}.65 ^{6"}1.47 = 8.66 * 3 = 26 (Gal)

Depth Purging From 22.80 ±

Time Purging Begins 12:55

Notes on Initial Discharge clear, no odor, slight organic sheen
Clear Other (Describe under comments)

Pre-Purge Sample (Check) Sheen Petro Odor

Time	Volume Purged	pH	Conductivity × 10 ³	I	Notes	Time	Volume Purged	pH	Conductivity	I	Notes
12:55	PP	-	-	-	see above						
1:16	10	7.40	250	23°C	murky No sheen or odor						
1:25	15	7.34	230	24°C	murky						
1:50	20	7.22	230	23°C	murky						
2:10	26	7.54	240	23°C	organic sheen, murky						

Time Sample Collection Begins 9:15 Time Sample Collection Ends 9:30 Total Volume Purged 26 gal

Depth to Water for 80% Recharge 12.16 Depth to Water After Total Purge 20.58 @ 2.11

DTW = 20.58 at 2:11 DTW = _____ at _____
DTW = 16.24 at 3:45 DTW = _____ at _____
DTW = 9.74 at 9:11 on 7/31/90 DTW = _____ at _____

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

Comments: After 20 min purge no longer produced any organic sheen or odor extensive iron pump on 2 discharge rollers were used to purge remainder of box.

DID YOU CHECK DEPTH OF WATER? ALSO SUCTION WOULD BE 1215 ALSO PIPE JOINT WOULD BE 134 FT FROM BOTTOM OF WELL SINCE ONE VAC LEAK.

**CONVERSE ENVIRONMENTAL WEST
Water Sampling Form**

Job # 88-44-380-20 Site 2724 Castro Valley Sampling Team TS
 Date 7/30/90 Well #/Source MW-3 Lab Sample I.D.# _____

Field conditions Sunny, warm

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

Describe All Meter/Equipment Calibration refer to MW-5 water sampling form for calibration info.

Total Depth of Well 24.35 Time 12:23 OVM Reading High 1 Average .7

Depth to Water Before Pumping 10.61 Product Present YES NO (Circle) Thickness _____

Height of Water Column (ft) 13.74 ^{2"}.16 ^{3"}.37 ^{4"}.65 ^{6"}1.47 = Volume 8.93 * Purge Multiple 3 = Volume to Purge 27 (Gal)

Depth Purging From 24.35 ±

Time Purging Begins 4:47 Notes on Initial Discharge clear, no odor or streak

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

Time	Volume Purged	pH	Conductivity	I	Notes	Time	Volume Purged	pH	Conductivity	I	Notes
4:47	0	-	-	-	see above	5:24 ^{H2}	27	7.45	300	24°	clear
5:00	10	7.50	180	25°c	clear, no odor						
5:10	15	7.46	300	24°c	clear						
5:15	20	7.48	300	24°c	clear						
5:20	25	7.45	308	24°c	clear						

Time Sample Collection Begins 8:40 Time Sample Collection Ends 8:48 Total Volume Purged _____

Depth to Water for 80% Recharge 13.310 Depth to Water After Total Purge 22.07 @ 5:25

DTW = 11.15 at 8:55 7/31/90 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 Costmilkly Sampling Team T.S.
 Date 7/30/90 Well #/Source MW-2 Lab Sample I.D.# 16.74 @ 3:45

Field conditions sunny, warm

Describe Equipment D-Con Before Sampling This Well refer to MW-5 water sampling form for decon on this well

Describe All Meter/Equipment Calibration refer to MW-5 for equip calib on this well

Total Depth of Well 14.92 Time 12:15 OVM Reading High 1 Average .2

Depth to Water Before Pumping 8.78 Product Present YES/NO (Circle) NO Thickness _____

Height of Water Column (ft) 6.14 $\begin{matrix} 2'' & 3'' & 4'' & 6'' \\ .16 & .37 & .65 & 1.47 \end{matrix}$ = Volume 4.00 * Purge Multiple 3 = Volume to Purge 12 (Gal)

Depth Purging From 14.92 ±

Time Purging Begins 2:45

Notes on Initial Discharge clear organic sheen, odor

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

Time	Volume Purged	pH	Conductivity	I	Notes	Time	Volume Purged	pH	Conductivity	I	Notes
2:45	pp	-	-	-	see above						
3:00	4	7.61	110	22°	clear, heavy						
3:03	7	7.76	111	22°	odor debris						
3:07	10	7.19	110	21°	odor						
3:35	12	7.19	111	22°	" "						

Time Sample Collection Begins 10:10 Time Sample Collection Ends 10:25 Total Volume Purged 12 gal

Depth to Water for 80% Recharge 10.00 Depth to Water After Total Purge 13.11

DTW = 8.87 at 10:05 7/31/90 DTW = _____ at _____
 DTW = _____ at _____ DTW = _____ at _____
 DTW = _____ at _____ DTW = _____ at _____

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

Well not dedicated used 4" S.S. hole
Stopped after 12 gals to 10' when red mud, red
water came out

**CONVERSE ENVIRONMENTAL WEST
Water Sampling Form**

Job # 22-44-380-20 Site 2724 Castroville Sampling Team TS
 Date 7/30/00 Well #/Source MW-1 Lab Sample I.D.# 900731 (10:00)

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 calibration info. on MW-1.

Total Depth of Well 15.32 Time 12:00 OVM Reading High 1 Average .2

Depth to Water Before Pumping 9.21 Product Present YES/NO (Circle) NO Thickness _____

Height of Water Column (ft) 6.11 $\frac{2}{.16}$ $\frac{3}{.37}$ $\frac{4}{.65}$ $\frac{6}{1.47}$ = 3.98 * Purge Multiple 3 = 12 (Gal)

Depth Purging From 15.32

Time Purging Begins 4:05

Notes on Initial Discharge clear, no debris or organic smell, steel

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

Time	Volume Purged	pH	Conductivity x10	I	Notes	Time	Volume Purged	pH	Conductivity	I	Notes
4:05	pp	-	-	-	see above						
4:15	4	6.83	140	24°C	clear no odor						
4:17	7	6.80	140	24°C	clear no odor						
4:19	10	6.81	140	24°C	" "						
4:20	12	6.80	140	24°C	clear no odor no debris						

Time Sample Collection Begins 9:40 Time Sample Collection Ends 9:50 Total Volume Purged 200

Depth to Water for 80% Recharge 10.44 Depth to Water After Total Purge 10.96 @ 4:20

DTW = 9.25 at 9:35 7/31/00 DTW = _____ at _____
 DTW = _____ at _____ DTW = _____ at _____
 DTW = _____ at _____ DTW = _____ at _____

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