ENVIRONMENTAL CONSULTING & MANAGEMENT
ROUX ASSOCIATES

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Transmittal/Memorandum

To: Ms. Jennifer Eberle
Alameda County Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

From: Paul Supple PS

Date: December 17, 1992

Subject: Site Assessment Report
UNOCAL Service Station No. 1871
96 MacArthur Boulevard, Oakland, California

Job No.: 27003W

Remarks: Enclosed is one copy of the subject report for your files.

---

cc: Mr. Robert Boust, UNOCAL
Mr. Richard Hiett, Regional Water Quality Control Board

Doc #UL27003W.1.2F

1120

SITE ASSESSMENT REPORT

UNOCAL Service Station No. 1871
96 MacArthur Boulevard
Oakland, California

December 17, 1992

Prepared for:

UNOCAL
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

Prepared by:

ROUX ASSOCIATES
1855 Gateway Boulevard
Suite 770
Concord, California 94520
(510) 602-2333

Doc #UL27003W.1.2

TITLE: Site Assessment Report
UNOCAL Service Station No. 1871
96 MacArthur Boulevard
Oakland, California

DATE: December 17, 1992

PROJECT NO: 27003W

SUBMITTED BY: Roux Associates
1855 Gateway Boulevard, Suite 770
Concord, California 94520

This work was done under the direction of the undersigned California Registered Geologist.

PREPARED BY:

Paul Supple
Senior Hydrogeologist

Dean A. Richesin
Certified Engineering Geologist No. 1055

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(continued)

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1.0 INTRODUCTION

This report describes the procedures and results of a site assessment performed by Roux Associates (Roux) at UNOCAL Service Station No. 1871 located at 96 MacArthur Boulevard, Oakland, California (Site, Figure 1). The purpose of the field investigation was to assess the extent and concentrations of petroleum hydrocarbons in soil and ground water at the Site. Three soil borings were drilled, sampled, and logged. Three ground water monitoring wells were installed in the boreholes. Undisturbed soil samples acquired during the drilling were submitted to a California Department of Health Services certified laboratory for chemical analysis. The work described in this report was conducted in October and November 1992, by Roux personnel under the direction of Mr. Dean A. Richesin, California Certified Engineering Geologist No. 1055.

2.0 SITE DESCRIPTION AND HISTORY

2.1 Site Description

UNOCAL Service Station No. 1871 is an operating self-service gasoline station and auto repair shop located at the northeast corner of the intersection of MacArthur Boulevard and Harrison Street in Oakland, California (Figure 1). The Site is an asphalt and concrete covered lot at an elevation of about 80 ft. above mean sea level (U.S. Geological Survey 1980). Topography in the area slopes approximately ten percent toward the southwest.

Current Site features include a service station building, two pump islands, one 280-gallon waste oil UST located west of the building, and two 12,000-gallon underground storage tanks (USTs) in a common tank complex in the center of the Site (Figure 2).

2.2 Regional Geology

The Site is located at the eastern margin of the San Francisco Bay in the East Bay Plain (Figure 1). The East Bay Plain is characterized by broad alluvial fans and alluvial plains which slope westward into San Francisco Bay. The Site is within the Oakland Alluvial Plain, a local ground water sub-area (Hickenbottom, 1988). A San Francisco Bay tidal estuary, Lake Merritt, is located about one mile south of the Site. The underlying sediments have been mapped as older alluvium which consists of layers of poorly consolidated clay, silt, sand, and gravel. The alluvial sediments are underlain by undivided bedrock at a depth between 100 to 200 ft. below ground surface (bgs) (Hickenbottom, 1988). The Site is located approximately two miles west of the active Hayward Fault (Helley, et al, 1979).

3.0 PREVIOUS INVESTIGATIONS

UNOCAL demolished the pump islands at the Site in May 1992, and constructed two new pump islands in the same locations. Roux collected four soil samples below the former pump islands following removal of the product dispensers and piping (Figure 3). Laboratory analysis of soil sample D3 indicated the presence of petroleum hydrocarbons at a concentration greater than 10 mg/kg (Table 1). A second sample (D3-A) was collected at the same location from a depth of eight feet bgs. **Sample D3-A contained total petroleum hydrocarbons as gasoline at 1,700 mg/kg** (Roux, 1992a). A UST Unauthorized Release Report was issued for this Site on July 16, 1992.

Soil encountered in shallow excavations completed at the Site during pump island removal and reconstruction activities consisted of reddish brown plastic clay and artificial fill. The artificial fill is made up primarily of loose, medium to coarse-grained sand, with abundant large fragments of asphalt, brick, wood, and other debris. Artificial fill was encountered from the ground surface to a depth of about eight feet bgs at the pump island along Harrison Street, and from ground surface to a depth of about 1.5 ft. bgs at the pump island along MacArthur Boulevard. Clay was encountered below the artificial fill at the pump island along MacArthur Boulevard.

Ground water was not encountered in any of the shallow excavations. The deepest of the excavations was completed to a maximum depth of eight feet bgs. Ground water at a BP (formerly Mobil) service station, located one block southeast of the Site, occurs at 14 ft. bgs, and flows toward the southwest at a gradient of 0.04 (Alton Geosciences, 1989).

On behalf of UNOCAL, Roux prepared a Work Plan describing the proposed Scope of Work and procedures for the initial phase of assessment work at the Site (Roux, 1992b). The Site Assessment Work Plan was submitted to the Alameda County Department of Environmental Health (ACDEH) on July 28, 1992. The ACDEH approved the Work Plan in a letter to UNOCAL dated July 29, 1992.

4.0 FIELD INVESTIGATION

Roux subcontracted with Gregg Drilling and Testing, Inc. (Gregg) of Concord, California, to drill soil borings and install ground water monitoring wells. Gregg is a California State licensed water well driller (C-57 license number 485165). Drilling permits were obtained from the Zone 7 Water Agency on September 30, 1992 (Appendix A). The Alameda County Department of Environmental Health (ACDEH) was notified by telephone prior to the beginning of work at the Site.

4.1 Soil Borings

Three soil borings (MW1 through MW3) were drilled on the Site during the investigation (Figure 4). The borings were drilled to a depth of 25 ft. bgs. A ground water monitoring well was installed into each borehole.

The boreholes were drilled using a Mobile B-61 drill rig equipped with 10-inch diameter, continuous flight, hollow stem augers. Samples were collected at 5-foot intervals using a 2.5-inch outside diameter, 18-inch long California Modified Split-spoon Sampler driven ahead of the augers with a 140-pound hammer dropped 30 in. The number of hammer blows required to drive the sampler each six inches was recorded on the geologic logs. Each sampler contained three stainless steel liners measuring two inches in diameter and six inches long.

The contents of the California Samplers were examined by the field geologist and were described using the Unified Soil Classification System. Geologic logs for each borehole were prepared and are presented in Appendix B.

Immediately after the sampler was recovered from the borehole and opened, one of the steel liners was set aside for possible laboratory analysis. The ends of the selected liner were covered with aluminum foil and a plastic cap, and sealed with duct tape. The liner was labeled with the location, time, date, sample identification number and sampler's initials. The liner was placed

in a plastic ziploc bag and stored on ice in a cooler chest until delivered to the laboratory. Chain-of-Custody documentation was maintained for all samples (Appendix C).

All of the downhole drilling equipment, including the augers, drill rods, and drill bits, were steam cleaned prior to use in each ground water monitoring well. The samplers and liners were scrubbed with a brush in a water and detergent solution, then rinsed with clean water and allowed to air dry prior to each sampling interval.

4.2 Ground Water Monitoring Wells

Ground water monitoring wells were installed in each of the boreholes. The wells were constructed of 4-inch diameter PVC pipe which was slotted (.020-inch slot) across the screen zone and completed to the surface with an appropriate length of blank 4-inch PVC riser pipe. The monitoring wells were screened from about 10 to 25 ft. bgs. The borehole annulus opposite the screen zones and about two feet above the screened zone was backfilled with a Lone-Star #3 sand filter pack. A layer of bentonite pellets approximately two feet thick was emplaced above the sand pack. The remaining space was filled with a cement-bentonite grout mixture to within one foot of land surface. Each of the wells were covered by a traffic-rated utility box set in concrete. The utility boxes were set about one inch above the surrounding ground surface. The wellheads were secured with 4-inch diameter, watertight, locking well caps. Well construction details are included on the well logs in Appendix B.

Roux developed the wells by pumping five casing volumes from each well. Development water was stored on-site in sealed 55-gallon drums.

The monitoring well locations and elevations were surveyed on October 13, 1992 by David Evans and Associates, Inc., licensed land surveyors. The Surveyor's Report is included as Appendix D.

4.3 Ground Water Measurement and Sampling

The depth to ground water in each well was measured on October 19, 1992 and November 3, 1992 (Table 2). The depth to ground water ranged between 12.05 and 16.55 ft. bgs. Ground water elevations calculated from the water levels indicated the direction of ground water movement at the Site is to the southwest at a gradient of about 0.04 (Figure 5).

Ground water samples were collected by GeoStrategies, Inc. of Hayward, California (GeoStrategies) on November 3, 1992. GeoStrategies measured the depth to water, collected ground water samples, and submitted the samples to a California state-certified laboratory for analyses. Water measurement and sampling methods will be included in a separate quarterly sampling report to be prepared by GeoStrategies. Field data and laboratory analytical reports are included in Appendix E. it's the previous report. No sign!

4.4 Laboratory Analyses

The soil samples collected from the soil borings were delivered for analysis to Sequoia Analytical, a California Department of Health Services certified laboratory, located in Concord, California. Selected soil samples from the boreholes were analyzed for total petroleum purgeable hydrocarbons (TPH-G) and for benzene, toluene, ethylbenzene, and total xylenes (BTEX) by U.S. Environmental Protection Agency (USEPA) Method 5030/8015/8020.

Table 3 summarizes the laboratory analytical data for the soil samples collected from the ground water monitoring well boreholes. Laboratory analytical reports and Chain-of-Custody documentation for the soil samples were included in Appendix C. ✓

The ground water samples collected from the monitoring wells were delivered for analysis to NET Pacific, Inc., located in Santa Rosa, California. Groundwater samples were analyzed for TPH-G and BTEX by USEPA Method 5030/8015/8020.

Table 4 summarizes the laboratory analytical data for the ground water samples collected from the monitoring wells. Concentrations of TPH-G and benzene are also presented in Figure 6. Laboratory analytical reports and Chain-in-Custody documentation for the ground water samples are included in Appendix E.

5.0 SOIL AND WATER DISPOSAL

5.1 Soil Sampling and Disposal

The soil generated during drilling was stockpiled on-site. The soil was placed on, and covered with visqueen. A composite sample was collected from the stockpile to characterize the soil for disposal.

On October 6, 1992, Roux collected four soil samples from the soil stockpile. To prepare the soil for sampling, six to twelve inches of soil were scraped away from the surface of the stockpile. Samples were collected from the prepared surface. The four samples were collected in stainless steel tubes and prepared for transport to the laboratory in the same manner utilized for the soil boring samples. Sequoia Analytical analyzed the composite sample for TPH-G, BTEX, STLC Lead, corrosivity, ignitability, and reactivity. The analytical data were given to Browning Ferris Industries Landfill in Livermore, California (BFI). Following approval from BFI, the soil was transported by Dillard Trucking of Byron, California to the BFI landfill. The soil was removed from the Site on October 29, 1992. Soil disposal documentation is included in Appendix F.

5.2 Water Disposal

Water generated during well development was removed from the Site on October 21, 1992, by Armour Petroleum (Armour) of Fairfield, California. Armour transported the water to Solano Community College for disposal. Water disposal documentation is included in Appendix F.

6.0 SUMMARY OF FINDINGS AND PLANNED ACTIVITIES

The following section summarizes the results of the investigation performed at the Site.

6.1 Site Geology and Hydrogeology

Geologic data was derived from the three boreholes drilled during this project (Appendix B) and from soils encountered in excavations during piping replacement activities. The soil underlying the Site consists of sandy clay, silty clay, and clay to a depth of about 4 ft. bgs, underlain by silty sand and gravely sand to a depth of about 16 ft. bgs in boreholes MW2 and MW3, and to a depth of 19.5 ft. bgs in borehole MW1. Silty clay was encountered below the sands to the explored depth of 25 ft. bgs. Artificial fill was encountered from the ground surface to a depth of about 8 ft. bgs at the pump island nearer Harrison Street, and from ground surface to a depth of about 1.5 ft. bgs at the pump island nearer MacArthur Boulevard. The artificial fill is made up of loose, medium to coarse-grained sand, with abundant large fragments of asphalt, brick, wood, and other debris.

The depth to water at the Site ranges from 12 to 16 ft. bgs. Static ground water elevations measured in the monitoring wells are about 63 ft. above mean sea level (Table 2). The ground water elevations indicate that ground water flow at the Site is towards the southwest at a gradient of about 0.04 (Figure 5).

6.2 Petroleum Hydrocarbons in Soil

Laboratory analyses of soil samples collected from boreholes and excavations at the Site indicate elevated concentrations of petroleum hydrocarbons were present in soil in the immediate vicinity of the pump island near Harrison Street. TPH-G was detected at a concentration of 1,700 mg/kg in soil at a depth of eight feet bgs in this area (Table 1, Figure 3).

Laboratory analyses of soil samples collected from boreholes MW1 and MW2, located north and east of the former tank cavity and pump islands (Figure 5), indicate that TPH-G and BTEX compounds were not present above the limits of detection (Table 3). Only the soil samples collected from borehole MW3 contained detectable concentrations of TPH-G and BTEX. The maximum concentration of TPH-G detected in soil samples collected from borehole MW3 was 10 mg/kg and the highest concentration of BTEX compounds was 0.73 mg/kg.

6.3 Petroleum Hydrocarbons in Ground Water

Laboratory analyses of ground water samples collected from the monitoring wells indicate TPH-G concentrations ranging from 140 µg/L to 260,000 µg/L and BTEX compounds at concentrations ranging from not detected to 17,000 µg/L (Table 4). All three monitoring wells contained detectable concentrations of TPH-G and BTEX (Figure 6). The highest concentrations of petroleum hydrocarbons were detected in ground water from monitoring wells MW1 and the lowest concentrations were detected in MW2.

7.0 REFERENCES

Alton Geosciences, Inc. 1989. Preliminary Site Investigation Report, Former Mobil Service Station No. E-6A, 100 MacArthur Boulevard, Oakland, California. December 20, 1989.

Helley, E.S., LaJoie, K.R., Spangle, W.E., and Blair, M.L. 1979. Flatland Deposits of the San Francisco Bay Region, California. U.S. Geological Survey Professional paper 943.

Hickenbottom, K. and Muir, K. 1988. Geohydrology and Ground Water Quality Overview, East Bay Plain Area, Alameda County, California 205(J) Report. Alameda County Flood Control and Water Conservation District, California.

Roux Associates. 1992a. Soil Sampling Below Removed Fuel Dispensers, UNOCAL Service Station No. 1871, 96 MacArthur Boulevard, Oakland, California. June 18, 1992.

Roux Associates. 1992b. Site Assessment Work Plan, UNOCAL Service Station No. 1871, 96 MacArthur Boulevard, Oakland, California. July 28, 1992.

U.S.G.S. 1980. Oakland West Quadrangle, California 1959; photo revised, 1980.

U.S.G.S. 1980. Oakland East Quadrangle, California 1959; photo revised, 1980.

TABLE 1: Summary of Soil Analyses: Below Removed Fuel Dispensers (Roux, 1992a)
UNOCAL Service Station No. 1871, Oakland, California

Sample Designation	Date Sampled	Depth (feet bgs)	TPH-G (1)	BTEX Distinction (1)				Lead (1)
				Benzene	Toluene	Ethylbenzene	Xylenes	
D1	5/13/92	2	ND	ND	ND	ND	ND	2.4
D2	5/13/92	2	ND	ND	ND	ND	ND	2.6
D3	5/13/92	4	58	0.20	0.087	0.52	0.97	23
D4	5/13/92	5	2.9	ND	ND	ND	0.0070	4.8
D3-A	5/18/92	8	1,700	3.1	1.0	11	5.4	18

FOOTNOTES

(1) = Concentrations reported in mg/kg (ppm)

TPH-G = Total Petroleum Fuel Hydrocarbons As Low/Medium Boiling Point Hydrocarbons (USEPA Method 8015)

BTEX Distinction (USEPA Method 8020)

Lead = Total Lead (USEPA Method 7421)

ND = Not Detected

bgs = Below ground surface

TABLE 2: Ground Water Elevations
UNOCAL Service Station No. 1871, Oakland, California

Well Number	Date Measured	Measuring Point Elevation (1)	Depth to Water (ft)	Water Level Elevation (1)
MW-1	10/19/92	81.18	16.55	64.63
MW-1	11/3/92	81.18	16.18	65.00
MW-2	10/19/92	76.61	12.41	64.20
MW-2	11/3/92	76.61	12.05	64.56
MW-3	10/19/92	77.48	14.61	62.87
MW-3	11/3/92	77.48	13.24	64.24

FOOTNOTES

(1) = Elevations measured in feet above mean sea level.

10-5-92

TABLE 3: Summary of Soil Analyses: Monitoring Wells
UNOCAL Service Station No. 1871, Oakland, California

Sample Designation	Date Sampled	Depth (feet bgs)	TPH-G	BTEX Distinction			
				Benzene	Toluene	Ethylbenzene	Xylenes
MW-1(5-6.5')	10/5/92	5-6.5	ND	ND	ND	ND	ND
MW-1(8.5-10')	10/5/92	8.5-10	ND	ND	ND	ND	ND
MW-1(13.5-15')	10/5/92	13.5-15	ND	ND	ND	ND	ND
MW-2(3.5-5')	10/5/92	3.5-5	ND	ND	ND	ND	ND
MW-2(8.5-10')	10/5/92	8.5-10	ND	ND	ND	ND	ND
MW-3(4-5.5')	10/6/92	4-5.5	ND	ND	ND	ND	ND
MW-3(9-10.5')	10/6/92	9-10.5	ND	ND	0.0088	ND	0.0060
MW-3(12-13.5')	10/6/92	12-13.5	4.2	0.079	0.010	0.16	0.26
MW-3(13.5-15')	10/6/92	13.5-15	10	0.040	0.013	0.40	0.73

FOOTNOTES

All concentrations reported in mg/kg (ppm)

TPH-G = Total Purgeable Petroleum Hydrocarbons (USEPA Method 8015)

BTEX Distinction (USEPA Method 8020)

ND = Not Detected (for detection limits see laboratory reports in Appendix C)

bgs = Below ground surface

TABLE 4: Summary of **Ground Water** Analyses
UNOCAL Service Station No. 1871, Oakland, California

11-3-92

Sample Designation	Date Sampled	TPH-G	BTEX Distinction			
			Benzene	Toluene	Ethylbenzene	Xylenes
MW-1	11/3/92	260,000	2,300	3,700	4,600	17,000
MW-2	11/3/92	140	2.2	ND	ND	2.0
MW-3	11/3/92	2,100	120	38	15	200

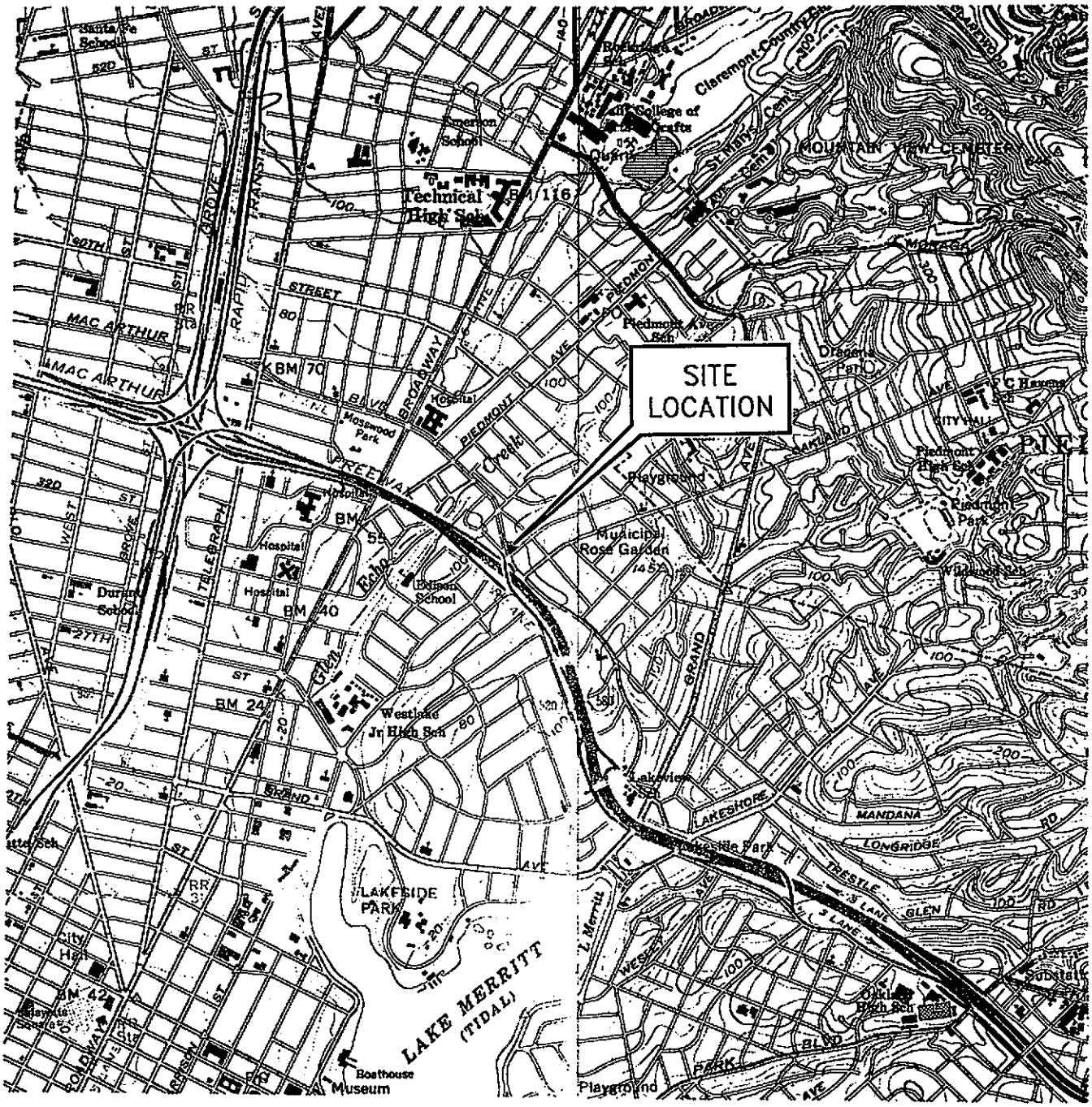
FOOTNOTES

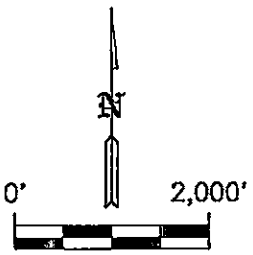
All concentrations reported in ug/L **(ppb)**

TPH-G = Total Petroleum Hydrocarbons As Gasoline (USEPA Method 8015)

BTEX Distinction (USEPA Method 8020)

ND = Not Detected (for detection limits see laboratory reports in Appendix E)





SOURCE:

USGS 7.5 MINUTE QUADRANGLES OF OAKLAND EAST, CALIFORNIA 1980, AND OAKLAND WEST, CALIFORNIA 1980.

ROUX
ROUX ASSOCIATES
ENVIRONMENTAL CONSULTING & MANAGEMENT

COMPILED BY:	P.S.
PREPARED BY:	R.P.
PROJECT MNGR.	P.S.
DATE:	12/92
SCALE:	AS SHOWN
PROJECT NO.	27003W
FILE NAME:	TOPO1871

PREPARED FOR: UNOCAL 76

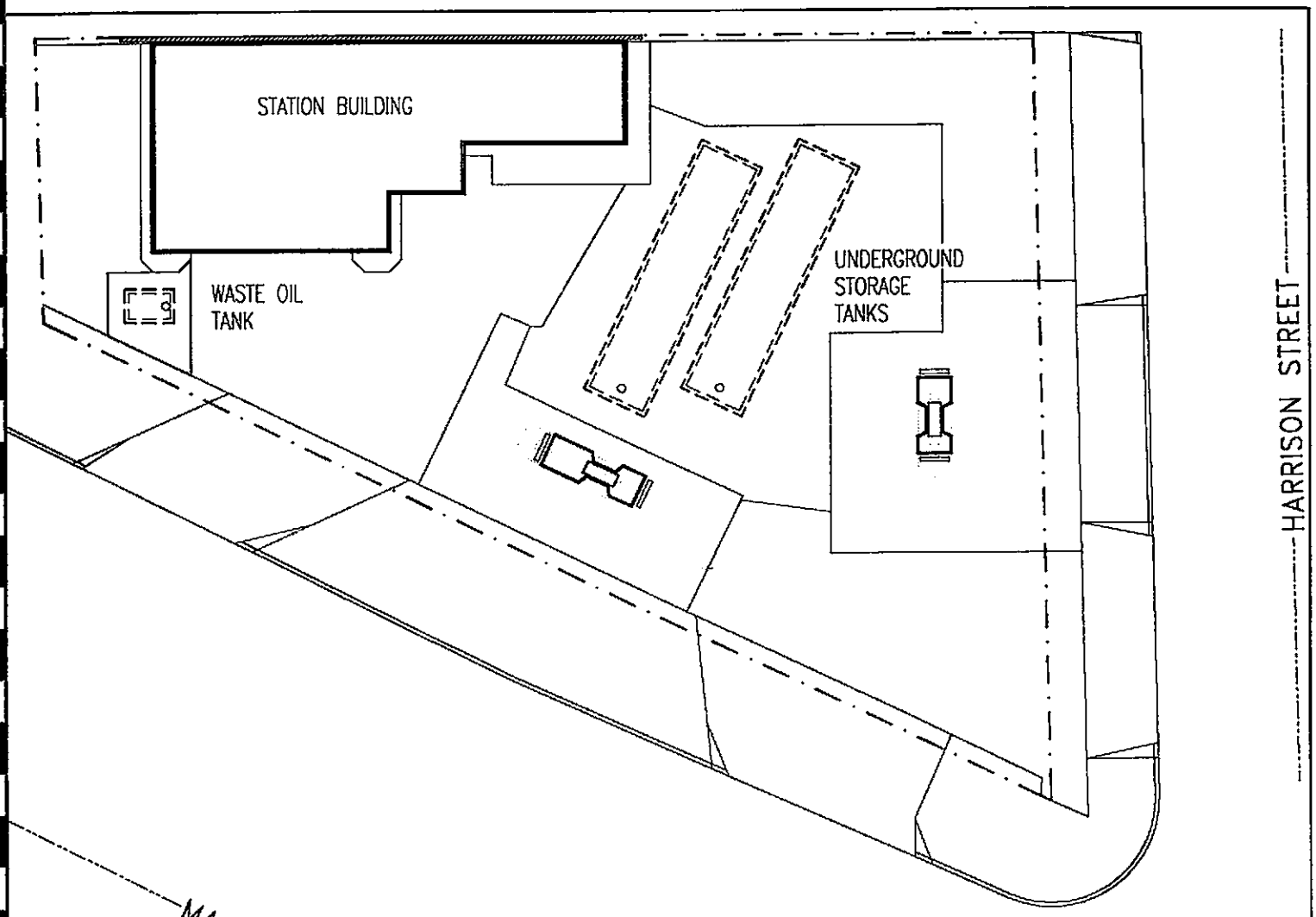
TITLE:

SITE LOCATION

UNOCAL SERVICE STATION NO. 1871

FIGURE

1



EXPLANATION:

- UNDERGROUND STORAGE TANK
- FILL PORT
- PROPERTY BOUNDARY LINE
- FORMER PUMP ISLAND
- EXISTING PUMP ISLAND

SOURCE:

MAP MODIFIED FROM BLUEPRINT PROVIDED BY UNOCAL 76, 04/92.

0' 20' 40'

APPROXIMATE SCALE

ROUX ASSOCIATES
ENVIRONMENTAL CONSULTING & MANAGEMENT

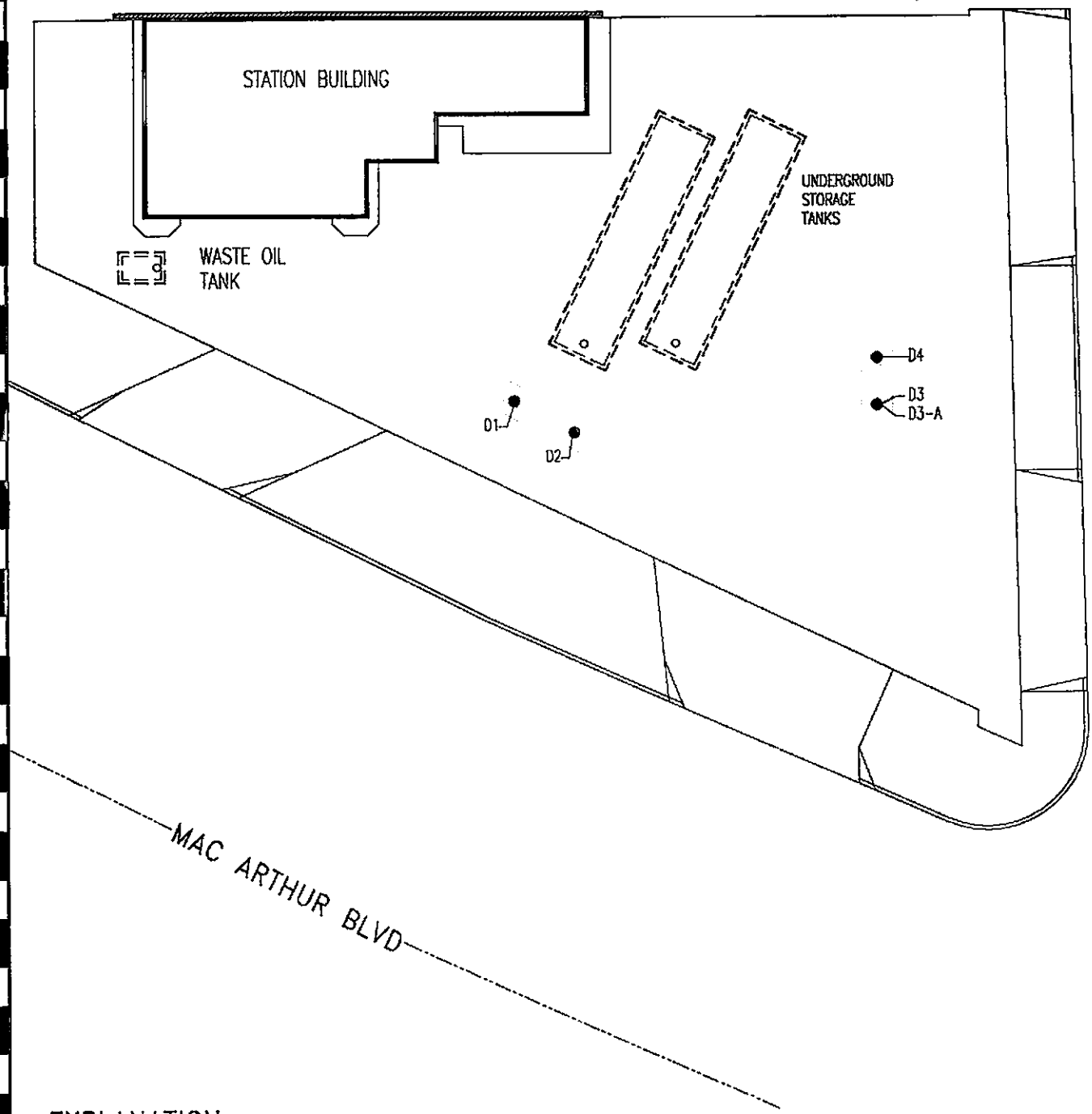
COMPILED BY:	P.S.
PREPARED BY:	R.P.
PROJECT MNGR.	P.S.
DATE:	12/92
SCALE:	AS SHOWN
PROJECT NO.	27003W
FILE NAME:	UN1871XX

PREPARED FOR: UNOCAL 76

TITLE: SITE PLAN

UNOCAL SERVICE STATION NO. 1871

FIGURE 2



EXPLANATION:

- UNDERGROUND STORAGE TANK
- FILL PORT
- FORMER PUMP ISLAND
- ●D1 SOIL SAMPLE LOCATION AND DESIGNATION.

SOURCE:

MAP MODIFIED FROM BLUEPRINT PROVIDED BY UNOCAL 76, 04/92.

0' 20' 40'

APPROXIMATE SCALE

ROUX ASSOCIATES
ENVIRONMENTAL CONSULTING & MANAGEMENT

COMPILED BY:	P.S.
PREPARED BY:	R.P.
PROJECT MNGR.	P.S.
DATE:	12/92
SCALE:	AS SHOWN
PROJECT NO.	27003W
FILE NAME:	UN1871XX

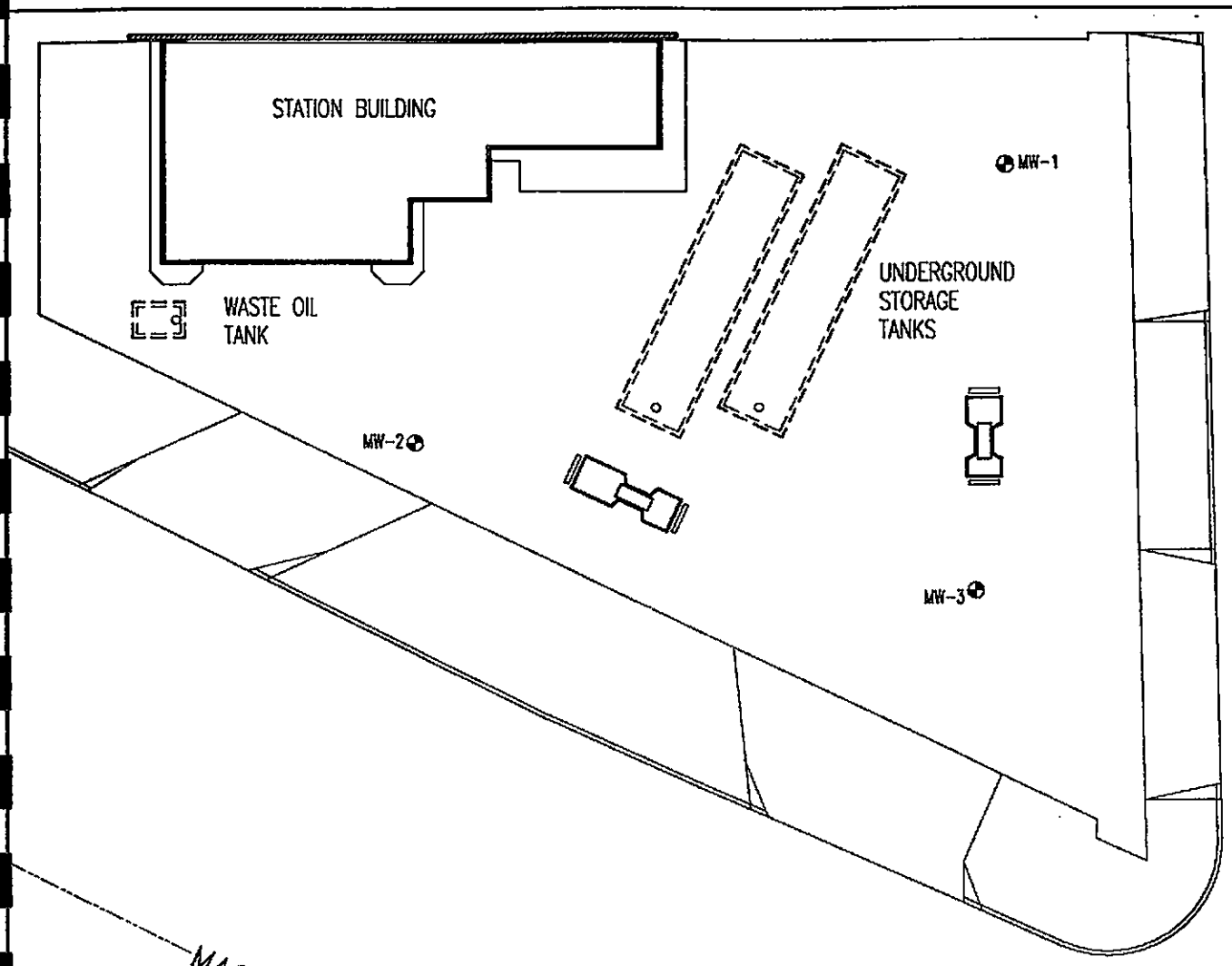
PREPARED FOR: UNOCAL 76

TITLE:

LOCATION OF SOIL SAMPLES

UNOCAL SERVICE STATION NO. 1871

FIGURE 3



EXPLANATION:

- MW-1 — MONITORING WELL LOCATION AND DESIGNATION
- UNDERGROUND STORAGE TANK
- FILL PORT
- EXISTING PUMP ISLAND

SOURCE:

MAP MODIFIED FROM BLUEPRINT PROVIDED BY UNOCAL 76, 04/92.

0' 20' 40'

APPROXIMATE SCALE

ROUX ASSOCIATES
ENVIRONMENTAL CONSULTING & MANAGEMENT

COMPILED BY:	P.S.
PREPARED BY:	R.P.
PROJECT MNGR.	P.S.
DATE:	12/92
SCALE:	AS SHOWN
PROJECT NO.	27003W
FILE NAME:	UN1871XX

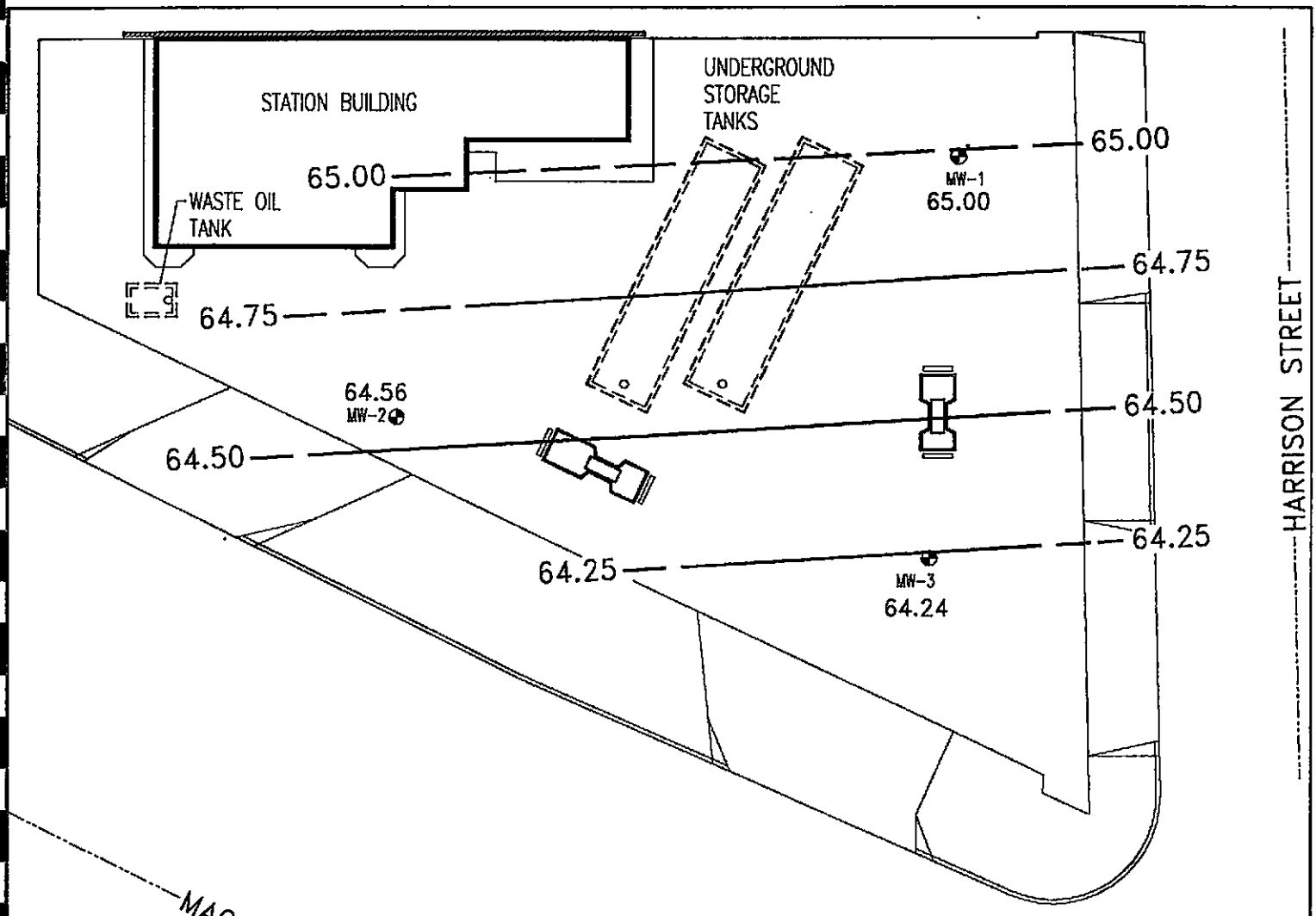
PREPARED FOR: UNOCAL 76

TITLE:

LOCATION OF MONITORING WELLS

UNOCAL SERVICE STATION NO. 1871

FIGURE 4



EXPLANATION:

- MW-1 / 65.00 — MONITORING WELL LOCATION AND DESIGNATION; GROUND WATER ELEVATION
- UNDERGROUND STORAGE TANK
- FILL PORT
- LINE OF EQUAL GROUND WATER ELEVATION (DASHED WHERE INFERRED)
- EXISTING PUMP ISLAND

0' 20' 40'

APPROXIMATE SCALE

SOURCE:

MAP MODIFIED FROM BLUEPRINT PROVIDED BY UNOCAL 76, 04/92.

ROUX
ROUX ASSOCIATES
ENVIRONMENTAL CONSULTING & MANAGEMENT

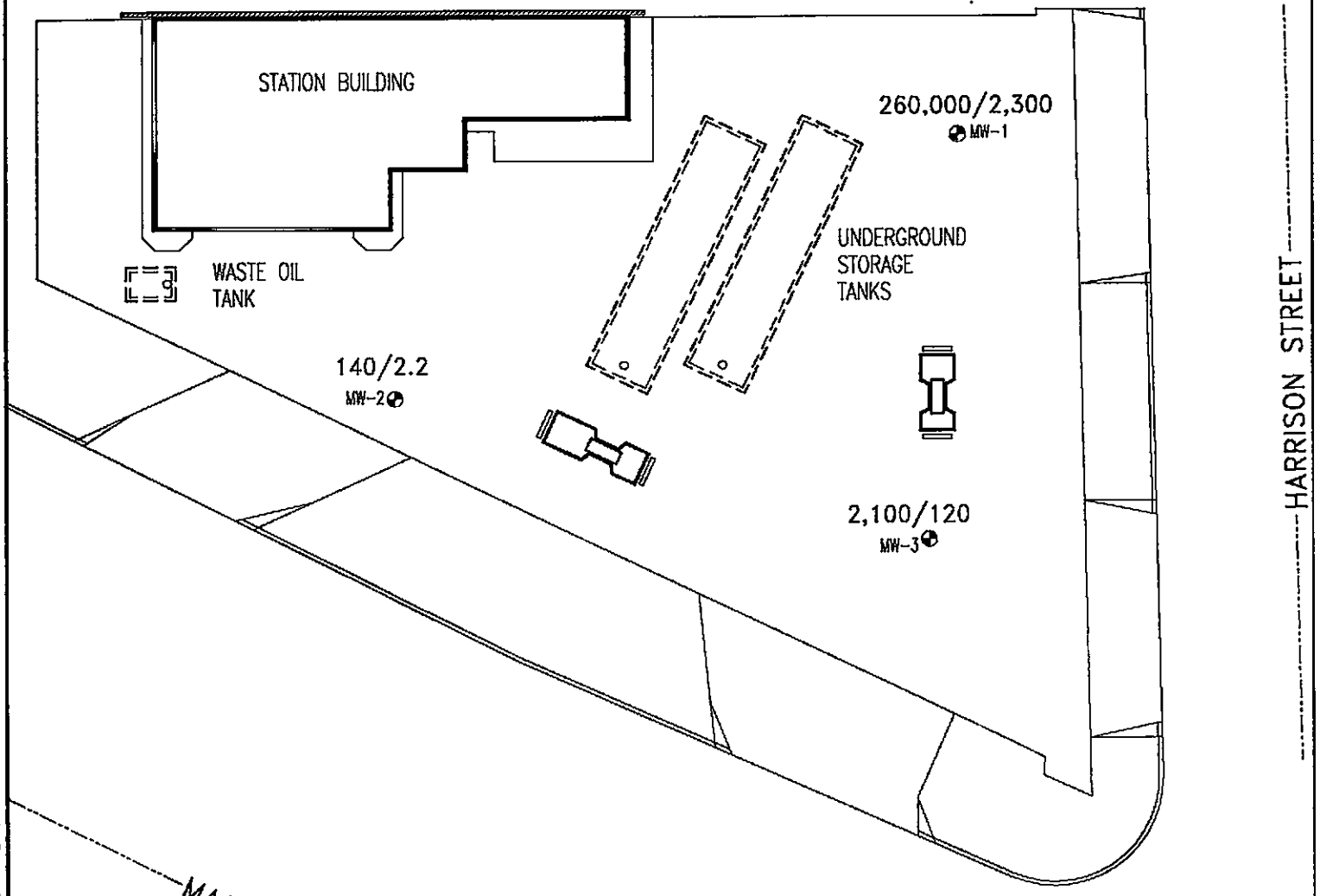
COMPILED BY:	P.S.
PREPARED BY:	R.P.
PROJECT MNGR.	P.S.
DATE:	12/92
SCALE:	AS SHOWN
PROJECT NO.	27003W
FILE NAME:	UN1871XX

PREPARED FOR: UNOCAL 76

TITLE: ELEVATION OF GROUND WATER
NOVEMBER 3, 1992

UNOCAL SERVICE STATION NO. 1871

FIGURE 5



EXPLANATION:

MW-1
140/2.2 — MONITORING WELL LOCATION AND DESIGNATION

CONCENTRATIONS OF TPH-G/BENZENE (ug/L)

UNDERGROUND STORAGE TANK

FILL PORT

EXISTING PUMP ISLAND

0' 20' 40'

APPROXIMATE SCALE

SOURCE:

MAP MODIFIED FROM BLUEPRINT PROVIDED BY UNOCAL 76, 04/92.

ROUX
ROUX ASSOCIATES
ENVIRONMENTAL CONSULTING & MANAGEMENT

COMPILED BY:	P.S.
PREPARED BY:	R.P.
PROJECT MNGR.	P.S.
DATE:	12/92
SCALE:	AS SHOWN
PROJECT NO.	27003W
FILE NAME:	UN1871XX

PREPARED FOR: UNOCAL 76

TITLE: CONCENTRATIONS OF TOTAL PETROLEUM HYDROCARBONS AS GASOLINE(TPH-G)/BENZENE IN GROUND WATER
NOVEMBER 3, 1992
UNOCAL SERVICE STATION NO. 1871

FIGURE 6

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT Unocal Service Station
96 MacArthur Blvd.
Oakland, CA 94610

CLIENT
Name Unocal
Address 2000 Crow Canyon Pl Valley Suite 400
City San Ramon Zip 94583

APPLICANT
Name Roux Associates
Fax (510) 285-1258
Address 1656 Gateway Blvd. Valley Suite 220
City Concord Zip 94520

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	X	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE N/A

Domestic	___	Industrial	___
Municipal	___	Irrigation	___
		Other	___

DRILLING METHOD:

Mud Rotary	___	Air Rotary	___
Auger	X	Cable	___
Other	___		

DRILLER'S LICENSE NO. 485165

WELL PROJECTS

Drill Hole Diameter	10"	in.	Maximum		
Casing Diameter	4"	in.	Depth	25'	ft.
Surface Seal Depth	2	ft.	Number	4	

GEOTECHNICAL PROJECTS

Number of Borings	___		Maximum		
Hole Diameter	___	in.	Depth	___	ft.

ESTIMATED STARTING DATE 10/5/92
ESTIMATED COMPLETION DATE 10/6/92

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Paul Supple Date 9-30-92

FOR OFFICE USE

PERMIT NUMBER 92484
LOCATION NUMBER ___

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 30 Sep 92
Wyman Hong

91992

ROUX

SYMBOL KEY

LITHOLOGIC SYMBOL KEY
(Unified Soil Classification System)


Fill


SW Well Graded Sand


SP Poorly Graded Sand


SM Silty Sand


SC Clayey Sand


PT Peat


OL Low Plasticity Organic Silt


OH High Plasticity Organic Silt


ML Low Plasticity Silt


MH High Plasticity Silt


GW Well Graded Gravel


GP Poorly Graded Gravel


GM Silty Gravel


GC Clayey Gravel


CL Low Plasticity Clay


CH High Plasticity Clay

SAMPLER SYMBOL KEY


Continuous Core Barrel


Standard Penetration Test


Modified California Sampler


Shelby Sampler


Auger Cuttings

WELL CONSTRUCTION SYMBOL KEY


Sand Pack w/Slotted Casing


Sand Pack


Concrete Grout/Fill


Bentonite Grout/Seal


Cement/Bentonite Grout

WATER LEVEL SYMBOL KEY


Water Level at Time of Drilling.


Stabilized Water Level.

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions			Group Symbols	Typical Names	Field Identification Procedures (excluding particles larger than 3 inches and basing fractions on estimated weights)			Information Required for Describing Soils
1	2		3	4	5			6
Coarse-grained Soils: More than half of material is larger than No. 200 sieve size. The No. 200 sieve size is about the smallest particle visible to the naked eye.	Gravels: More than half of coarse fraction is larger than No. 4 sieve size. (For visual classification, the 1/4-in. size may be used as equivalent to the No. 4 sieve size.)	Clean Gravels (Little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines.	Wide range in grain sizes and substantial amounts of all intermediate particle sizes.			For undisturbed soils add information on stratification, degree of compactness, cementation, moisture conditions, and drainage characteristics.
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.	Predominantly one size or a range of sizes with some intermediate sizes missing.			
		Gravels with Fines (Appreciable amount of fines)	GM	Silty gravels, gravel-sand-silt mixture.	Nonplastic fines or fines with low plasticity (for identification procedures see ML below)			Give typical name: Indicate approximate percentage of sand and gravel, maximum size; angularity, surface condition, and hardness of the coarse grains; local or geologic name and other pertinent descriptive information; and symbol in parentheses.
			GC	Clayey gravels, gravel-sand-clay mixtures.	Plastic fines (for identification see CL below)			
	Sands: More than half of coarse fraction is smaller than No. 4 sieve size	Clean Sands (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines.	Wide range in grain size and substantial amounts of all intermediate particle sizes.			
			SP	Poorly graded sands or gravelly sands, little or no fines.	Predominantly one size or a range of sizes with some intermediate sizes missing.			Example: Silty sand, gravelly; about 20% hard, angular gravel particles 1/2 in. maximum size; rounded and subangular sand grains, coarse to fine; about 15% nonplastic fines with low dry strength; well compacted and moist in place; alluvial sand; (SM).
		Sands with Fines (Appreciable amount of fines)	SM	Silty sands, sand-silt mixtures.	Nonplastic fines or fines with low plasticity (for identification procedures see ML below)			
			SC	Clayey sands, sand-clay mixtures.	Plastic fines (for identification procedures see CL below)			
Fine-grained Soils: More than half of material is smaller than No. 200 sieve size. The No. 200 sieve size is about the smallest particle visible to the naked eye.					Identification Procedures on Fraction Smaller than No. 40 Sieve Size			
					Dry Strength (Crushing characteristics)	Dilatancy (Reaction to shaking)	Toughness (Consistency near PL)	
	Silts and Clays: Liquid limit is less than 50		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.	None to slight	Quick to slow	None	For undisturbed soils add information on structure, stratification, consistency in undisturbed and remolded states, moisture and drainage conditions.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.	Medium to high	None to very slow	Medium	
			OL	Organic silts and organic silty clays of low plasticity.	Slight to medium	Slow	Slight	Give typical name; indicate degree and character of plasticity; amount and maximum size of coarse grains; color in wet condition; odor, if any; local or geologic name and other pertinent descriptive information; and symbol in parentheses.
	Silts and Clays: Liquid limit is greater than 50		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.	Slight to medium	Slow to none	Slight to medium	
			CH	Inorganic clays of high plasticity, fat clays.	High to very high	None	High	
			OH	Organic clays and silts of medium to high plasticity.	Medium to high	None to very slow	Slight to medium	Example: Clayey silt, brown; slighty plastic; small percentage of fine sand; numerous vertical root holes; firm and dry in place; loess; (ML).
Highly Organic Soils			Pt	Peat and other highly organic soils.	Readily identified by color, odor, spongy feel and frequently by fibrous texture.			

ROUX

Project: UNOCAL SERVICE STATION #1871 96 MACARTHUR BLVD., OAKLAND	**Log of Well No.** MW-1
Date Started: 10/5/92 Completed: 10/5/92	Measuring Point Elevation (ft): 81.18 Total Depth (ft): 25.0
Logged By: K. Bishop Checked By: T. Ramsden	Water Level During Drilling (ft): 14.5 Stabilized (ft): 16.6
Drilling Co: Gregg Drilling	Casing: 4" Schedule 40 PVC Drill Bit Diameter (in): 10
Drilling Method: Hollow Stem Auger	Perforation: 0.020 from 24.5 ft to 9.5 ft
Drilling Equipment: Mobile B-61	Pack: #3 Lone Star Sand from 24.5 ft to 8.5 ft
Sampler: CA Modified Split Spoon	Seal: Bentonite Pellots from 8.5 ft to 6.5 ft
	Cement Grout from 6.5 ft to 0 ft

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Monitoring Well Construction	Sample	Blow Counts	OVM (ppm)	Recovery (%)	REMARKS
	Asphalt Basecrock	CL						
	SILTY CLAY, Light brown, 90% clay, 10% silt, damp, no odor, some minor gravels and rootlets.							
	SILTY CLAY, Blue black, 90% clay, 10% silt, damp, sewer odor, some rootlets.							
	SILTY SAND, Light brown, 80% sand, 20% silt, dry, no odor, some 1/8"-1/4" gravels.	SW						
5	GRAVELLY SAND, Yellow brown, 90% coarse sand, 10% angular gravel, dry, no odor				22 50/5"	--	44	
		SM						-- OVM malfunction; no readings taken.
	SILTY SAND, Light brown, 70% sand, 20% silt, 10% clay, poorly sorted, moist, no odor,				17 57 30/2"	--	67	
10								
					25 50/5"	--	44	
15	GRAVELLY SAND, Green-blue, 60% sand, 40% gravel, wet, slight odor, 1/4" gravel.	SW						
						--	66	
20	SILTY CLAY, Medium brown, 90% clay, 10% silt, wet, no odor.	CL						
					12 25 50/4"	--	89	
25	Bottom of Hole at 25.0 feet.							

ROUX

Project: UNOCAL SERVICE STATION #1871 96 MACARTHUR BLVD., OAKLAND	Log of Well No. MW-2
Date Started: 10/5/92 Completed: 10/5/92	Measuring Point Elevation (ft): 76.61 Total Depth (ft): 25.0
Logged By: K. Bishop Checked By: T. Ramsden	Water Level During Drilling (ft): 14.0 Stabilized (ft): 12.4
Drilling Co: Gregg Drilling	Casing: 4" Schedule 40 PVC Drill Bit Diameter (in): 10
Drilling Method: Hollow Stem Auger	Perforation: 0.020 from 25 ft to 10 ft
Drilling Equipment: Mobile B-61	Pack: #3 Lone Star Sand from 25 ft to 9 ft
Sampler: CA Modified Split Spoon	Seal: Bentonite Pellots from 9 ft to 7 ft
	Cement Grout from 7 ft to 0 ft

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Monitoring Well Construction	Sample	Blow Counts	OVM (ppm)	Recovery (%)	REMARKS
	Asphalt Basecrock SILTY SAND, Medium brown, 80% sandy, 20% silt, dry, no odor.	SM						-- OVM malfunction; no readings taken.
	CLAY, Grey blue, 90 clay, 10 silt, damp, no odor, red/brown weathering. SANDY CLAY, Medium brown, 80% clay, 20% sand, damp, no odor, some 1/4" gravel. CLAYEY SAND, Light brown, 60% sand, 40% clay, damp, no odor, red/brown staining.	CL			5 16 32	--	67	
5								
		GP						
	GRAVELLY SAND, Yellow brown with blue-grey weathering, 60% sand, 40% gravel, damp, no odor.				25 30 34	--	67	
10								
	SANDY GRAVEL, Grey blue, 50% sand, 50% gravel, wet, no odor. GRAVELLY SAND, Yellow brown with blue-grey weathering, 60% sand, 40% gravel, damp, no odor.				37 50 50/3	--	56	
15								
		CL						
	SILTY CLAY, Medium brown, 90% clay, 10% silt, wet, no odor.				5 10 15	--	100	
20								
	Cuttings- SILTY CLAY, Medium brown, 90% clay, 10% silt, wet, no odor.				10 15 25		100	
25	Bottom of Hole at 25.0'							

ROUX

Project: UNOCAL SERVICE STATION #1871 96 MACARTHUR BLVD., OAKLAND	Log of Well No. MW-3
Date Started: 10/6/92 Completed: 10/6/92	Measuring Point Elevation (ft): 77.48 Total Depth (ft): 25.5
Logged By: K. Bishop Checked By: T. Ramsden	Water Level During Drilling (ft): 15.0 Stabilized (ft): 14.6
Drilling Co: Gregg Drilling	Casing: 4" Schedule 40 PVC Drill Bit Diameter (in): 10
Drilling Method: Hollow Stem Auger	Perforation: 0.020 from 24 ft to 9 ft
Drilling Equipment: Mobile B-61	Pack: #3 Lone Star Sand from 24 ft to 8 ft
Sampler: CA Modified Split Spoon	Seal: Bentonite Pellots from 8 ft to 6 ft
	Cement Grout from 6 ft to 0 ft

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Monitoring Well Construction	Sample	Blow Counts	OVM (ppm)	Recovery (%)	REMARKS
	Asphalt Basecrock GRAVELLY CLAYEY SAND, Dark brown, 40% sand 40% gravel, 20% clay, damp, no odor.	GC						-- OVM malfunction; no readings taken.
	SANDY CLAY, Black, 80% clay, 20% sand, damp, no odor.	CL			8	--	100	
	GRAVELLY COARSE SAND, Light brown, damp, no odor, 1/4" gravel.	SP			27 32			
	Same as above.				27 30 32	--	67	
5								
	Same as above.				27	--	67	
	GRAVELLY SAND, Blue-grey, 60% coarse sand, 30% gravel, 10% clay, damp, no odor, red-brown weathering.				39 50/5			
	GRAVELLY SAND, Blue-grey, 60% coarse sand, 40% gravel, dry, slight odor.				28 50 50/2	--	67	
10								
	Same as above. Varying amounts of Sand.				22 40 50	--	100	
	Same as above. Wet with Strong hydrocarbon odor.				22 32 50/5"	--	89	
	COARSE SAND and SILT, Blue-grey, 90% sand, 10% silt, wet, no odor, some gravel.	SC			15 31 42	--	100	
15	Same as above.				20 30 38	--	100	
	CLAY, Medium brown, wet, no odor.	CL						
20	SILTY CLAY, Medium brown, 90% clay, 10% silt, wet, no odor.				10 16 27	--		
		SC						
	SILTY SAND, Medium brown, 60% sand, 30% silt, 10% clay, wet, no odor, 1/4" occasional gravels.				18 32 50/3"	--		
25								
	Bottom of Boring 25.5'.							

APPENDIX C

Laboratory Analytical Reports
and
Chain-of-Custody Documentation
Soil Samples

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Roux Associates	Client Project ID:	Unocal #1871, 96 MacArthur Blvd., Oakland	Sampled:	Oct 5, 1992
1855 Gateway Blvd. Suite 770	Sample Matrix:	Soil	Received:	Oct 5, 1992
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Oct 12, 1992
Attention: Todd Ramsden	First Sample #:	210-0130		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 210-0130 MW1(5-6.5')	Sample I.D. 210-0131 MW1(8.5-10')	Sample I.D. 210-0132 MW1(13.5-15')	Sample I.D. 210-0133 MW2(3.5-5')	Sample I.D. 210-0134 MW2(8.5-10')
Purgeable Hydrocarbons	1.0	N.D.	N.D.	N.D.	N.D.	N.D.
Benzene	0.005	N.D.	N.D.	N.D.	N.D.	N.D.
Toluene	0.005	N.D.	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.005	N.D.	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.005	N.D.	N.D.	N.D.	N.D.	N.D.
Chromatogram Pattern:		--	--	--	--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	10/6/92	10/6/92	10/7/92	10/6/92	10/6/92
Instrument Identification:	HP-2	HP-2	HP-4	HP-2	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	97	102	106	99	100

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Kenneth K.F. Lee
Laboratory Director

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
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Roux Associates
1855 Gateway Blvd. Suite 770
Concord, CA 94520
Attention: Todd Ramsden

Client Project ID: Unocal #1871, 96 MacArthur Blvd., Oakland

QC Sample Group: 2100130-134

Reported: Oct 12, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020
Analyst:	J.F.	J.F.	J.F.	J.F.
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	Oct 6, 1992	Oct 6, 1992	Oct 6, 1992	Oct 6, 1992
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	0.40	0.40	0.40	1.2
Conc. Matrix Spike:	0.42	0.42	0.43	1.4
Matrix Spike % Recovery:	105	105	108	116
Conc. Matrix Spike Dup.:	0.42	0.44	0.45	1.4
Matrix Spike Duplicate % Recovery:	105	110	112	116
Relative % Difference:	0.0	4.6	4.5	0.0

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Kenneth K.F. Lee
Laboratory Director

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

ROUX

CHAIN OF CUSTODY

№ 00382

Ground-Water Consultants
ROUX ASSOCIATES INC

ANALYSES

PROJECT NAME: UNOCAL 1871

PROJECT NUMBER:

PROJECT LOCATION: 96 MacARTHUR BLVD. OAKLAND

SAMPLER(S): K. BISHOP

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	SAMPLE MATRIX	TPH-G 8015 BTEX 8020					TOTAL BOTTLES	PRESERVATION
MW-1 5½'-6½'	10/5/92	0912	SOIL	X						ICE 2100130
MW-1 8½'-10'	10/5/92	0920	SOIL	X						131
MW-1 13½'-15'	10/5/92	0928	SOIL	X						132
MW-1 18½'-20'	10/5/92	0944	SOIL	X	Discard as per client					~~133~~ 135
MW-1 23½'-25'	10/5/92	0955	SOIL	X						~~134~~
MW-2 3½'-5'	10/5/92	1210	SOIL	X						133 ~~135~~
MW-2 8½'-10'	10/5/92	1216	SOIL	X						134 ~~136~~
MW-2 13½'-15'	10/5/92	1224	SOIL	X	Hold					~~137~~
MW-2 18½'-20'	10/5/92	1233	SOIL	X	Discard		KL 10/6/92			~~138~~

SAMPLER'S RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N
K. Bishop	ROUX	10/5/92	1613			SJC	10.5.92	4:13 pm	
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N

DELIVERY METHOD: HAND

ANALYTICAL LABORATORY: SEQUOIA

COMMENTS: 10 day TAT

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Roux Associates	Client Project ID:	Unocal #1871/ #27003W	Sampled:	Oct 6, 1992
1855 Gateway Blvd. Suite 770	Sample Matrix:	Soil	Received:	Oct 6, 1992
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Oct 16, 1992
Attention: Paul Supple	First Sample #:	210-0156		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 210-0156 MW-3 4-5 1/2'	Sample I.D. 210-0157 MW-3 9-10.5'	Sample I.D. 210-0158 MW-3 12-13.5'
Purgeable Hydrocarbons	1.0	N.D.	N.D.	4.2
Benzene	0.005	N.D.	N.D.	0.079
Toluene	0.005	N.D.	0.0088	0.010
Ethyl Benzene	0.005	N.D.	N.D.	0.16
Total Xylenes	0.005	N.D.	0.0060	0.26
Chromatogram Pattern:		--	--	Gasoline

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0
Date Analyzed:	10/6/92	10/6/92	10/7/92
Instrument Identification:	HP-2	HP-2	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	99	100	107

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Kenneth K.F. Lee
Laboratory Director

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Roux Associates	Client Project ID:	Unocal #1871, 96 MacArthur Blvd., Oakland	Sampled:	Oct 6, 1992
1855 Gateway Blvd. Suite 770	Sample Matrix:	Soil	Received:	Oct 19, 1992
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Oct 20, 1992
Attention: Paul Supple	First Sample #:	#2100156		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. #2100156 MW-3 13.5-15'
Purgeable Hydrocarbons	1.0	10
Benzene	0.005	0.040
Toluene	0.005	0.013
Ethyl Benzene	0.005	0.40
Total Xylenes	0.005	0.73
Chromatogram Pattern:		Gasoline

Quality Control Data

Report Limit Multiplication Factor:	2.5
Date Analyzed:	10/19/92
Instrument Identification:	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	115

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Kenneth K.F. Lee
Laboratory Director

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Roux Associates
1855 Gateway Blvd. Suite 770
Concord, CA 94520
Attention: Paul Supple

Client Project ID: Unocal #1871, 96 MacArthur Blvd., Oakland

QC Sample Group: 210-0525

Reported: Oct 20, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020
Analyst:	A.P.	A.P.	A.P.	A.P.
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	Oct 19, 1992	Oct 19, 1992	Oct 19, 1992	Oct 19, 1992
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	0.40	0.40	0.40	1.2
Conc. Matrix Spike:	0.42	0.42	0.44	1.4
Matrix Spike % Recovery:	105	105	110	116
Conc. Matrix Spike Dup.:	0.41	0.42	0.44	1.4
Matrix Spike Duplicate % Recovery:	102	105	110	116
Relative % Difference:	2.4	0.0	0.0	0.0

SEQUOIA ANALYTICAL

Kenneth K.F. Lee
Laboratory Director

% Recovery: $\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$

Relative % Difference: $\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{(\text{Conc. of M.S. + Conc. of M.S.D.}) / 2} \times 100$

ROUX

CHAIN OF CUSTODY

№ 00403

PAGE OF

Ground-Water Consultants
ROUX ASSOCIATES INC
1855 GATEWAY BLVD CONCORD
PHONE (510) 687-1258
PROJ. MGR: PAUL SUPPLE

PROJECT NAME: UNOCAL 1871

PROJECT NUMBER: 27003W

PROJECT LOCATION: 96 MacARTHOR BLVD, OAKLAND

SAMPLER(S): K. BISHOP

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	SAMPLE MATRIX	ANALYSES: TPH-G 8015	BTEX 8020	TPH-G	TCLP-BTEX	STLC LEAD	PCI	TOTAL # OF BOTTLES	PRESERVATION
MW-3 4-5½'	10/6/92	0859	SOIL	X						1	ICE 2100156
MW-3 9-10.5'	10/6/92	0908	"	X						1	157
MW-3 12-13.5'	10/6/92	0920	"	X						1	158
MW-3 13.5-15'	10/6/92	0933	"	HOLD						1	
										1	
~~S-8~~ S-1 A-D	10/6/92	1741	"		X	X	X	X		4	✓ 159AE

SAMPLER'S RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N
K. Bishop	ROUX	10/6/92	1447			SAR	10-6-92	2:47 pm	
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N

DELIVERY METHOD: HAND

ANALYTICAL LABORATORY: SEQUOIA

COMMENTS: STANDARD TURNAROUND TIME

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Roux Associates	Client Project ID:	Unocal #1871/ #27003W	Sampled:	Oct 6, 1992
1855 Gateway Blvd. Suite 770	Sample Matrix:	TCLP Extract of Soil Sample	Received:	Oct 6, 1992
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Oct 16, 1992
Attention: Paul Supple	First Sample #:	210-0159		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/L	Sample I.D. 210-0159 S-1 A-D
Purgeable Hydrocarbons	1.0	N.D.
Benzene	0.010	N.D.
Toluene	0.010	N.D.
Ethyl Benzene	0.010	N.D.
Total Xylenes	0.010	N.D.
Chromatogram Pattern:		--

Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Analyzed:	10/13/92
Instrument Identification:	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	96

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Kenneth K.F. Lee
Laboratory Director

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Roux Associates	Client Project ID:	Unocal #1871/ #27003W	Sampled:	Oct 6, 1992
1855 Gateway Blvd. Suite 770	Sample Descript:	Extract of Soil Sample	Received:	Oct 6, 1992
Concord, CA 94520	Analysis for:	STLC Lead	Extracted:	Oct 12, 1992
Attention: Paul Supple	First Sample #:	210-0159	Analyzed:	Oct 16, 1992
			Reported:	Oct 16, 1992

LABORATORY ANALYSIS FOR: STLC Lead

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
210-0159	S-1 A-D	0.0050	0.059

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Kenneth K.F. Lee
Laboratory Director

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Roux Associates	Client Project ID:	Unocal #1871/ #27003W	Sampled:	Oct 6, 1992
1855 Gateway Blvd. Suite 770	Sample Descript:	Soil, S-1 A-D	Received:	Oct 6, 1992
Concord, CA 94520			Analyzed:	10/8-10/13/92
Attention: Paul Supple	Lab Number:	210-0159	Reported:	Oct 16, 1992

CORROSIVITY, IGNITABILITY, AND REACTIVITY

Analyte	Detection Limit	Sample Results
Corrosivity:		
pH	N.A.	7.4
Ignitability:		
Flashpoint (Pensky-Martens), °C	N.A.	> 100 °C
Reactivity:		
Sulfide, mg/kg	10	N.D.
Cyanide, mg/kg	0.50	N.D.
Reaction with water	N.A.	Negative

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Kenneth K.F. Lee
Laboratory Director

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Roux Associates
1855 Gateway Blvd. Suite 770
Concord, CA 94520
Attention: Paul Supple

Client Project ID: Unocal #1871/ #27003W

QC Sample Group: 2100156-159

Reported: 101/6

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	pH	Cyanide	R-Sulfide
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 9045	EPA 9010	EPA 9030
Analyst:	J.F.	J.F.	J.F.	J.F.	Y.A.	N.S.	K.F.
Reporting Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	N/A	mg/Kg	mg/Kg
Date Analyzed:	Oct 6, 1992	Oct 6, 1992	Oct 6, 1992	Oct 6, 1992	Oct 8, 1992	Oct 7, 1992	Oct 13, 1992
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank	210-0948	209-4004	210-0759
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	8.1	3.6	N.D.
Spike Conc. Added:	0.40	0.40	0.40	1.2	N/A	2.9	1300
Conc. Matrix Spike:	0.42	0.42	0.43	1.4	N/A	5.7	1300
Matrix Spike % Recovery:	105	105	108	116	N/A	72	100
Conc. Matrix Spike Dup.:	0.42	0.44	0.45	1.4	8.1	6.0	1200
Matrix Spike Duplicate % Recovery:	105	110	112	116	N/A	83	92
Relative % Difference:	0.0	4.6	4.5	0.0	0.0	5.1	8.0

SEQUOIA ANALYTICAL

Kenneth K.F. Lee
Laboratory Director

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Roux Associates
1855 Gateway Blvd. Suite 770
Concord, CA 94520
Attention: Paul Supple

Client Project ID: Unocal #1871/ #27003W

QC Sample Group: 2100156-159

Reported: Oct 16, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Flashpoint	STLC Lead
Method:	EPA 1010	EPA 7420
Analyst:	K.F.	K.V.S.
Reporting Units:	N/A	mg/L
Date Analyzed:	Oct 12, 1992	Oct 16, 1992
QC Sample #:	210-0783	210-0159
Sample Conc.:	>100°C	0.059
Spike Conc. Added:	N/A	0.50
Conc. Matrix Spike:	N/A	0.55
Matrix Spike % Recovery:	N/A	98
Conc. Matrix Spike Dup.:	>100°C	0.52
Matrix Spike Duplicate % Recovery:	N/A	92
Relative % Difference:	0.0	5.6

SEQUOIA ANALYTICAL

Kenneth K.F. Lee
Laboratory Director

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

ROUX

CHAIN OF CUSTODY

№ 00403

Ground-Water Consultants ROUX ASSOCIATES INC	1855 GATEWAY BLVD (CANCELED) PH (510) 687-1158 PROJ. MGR: PAUL SUPPLEE	ANALYSES
PROJECT NAME: UNOCAL 1871	PROJECT NUMBER: 27003W	
PROJECT LOCATION: 96 MacARTHOR BLVD, OAKLAND		
SAMPLER(S): K. BISHOP		

PAGE OF

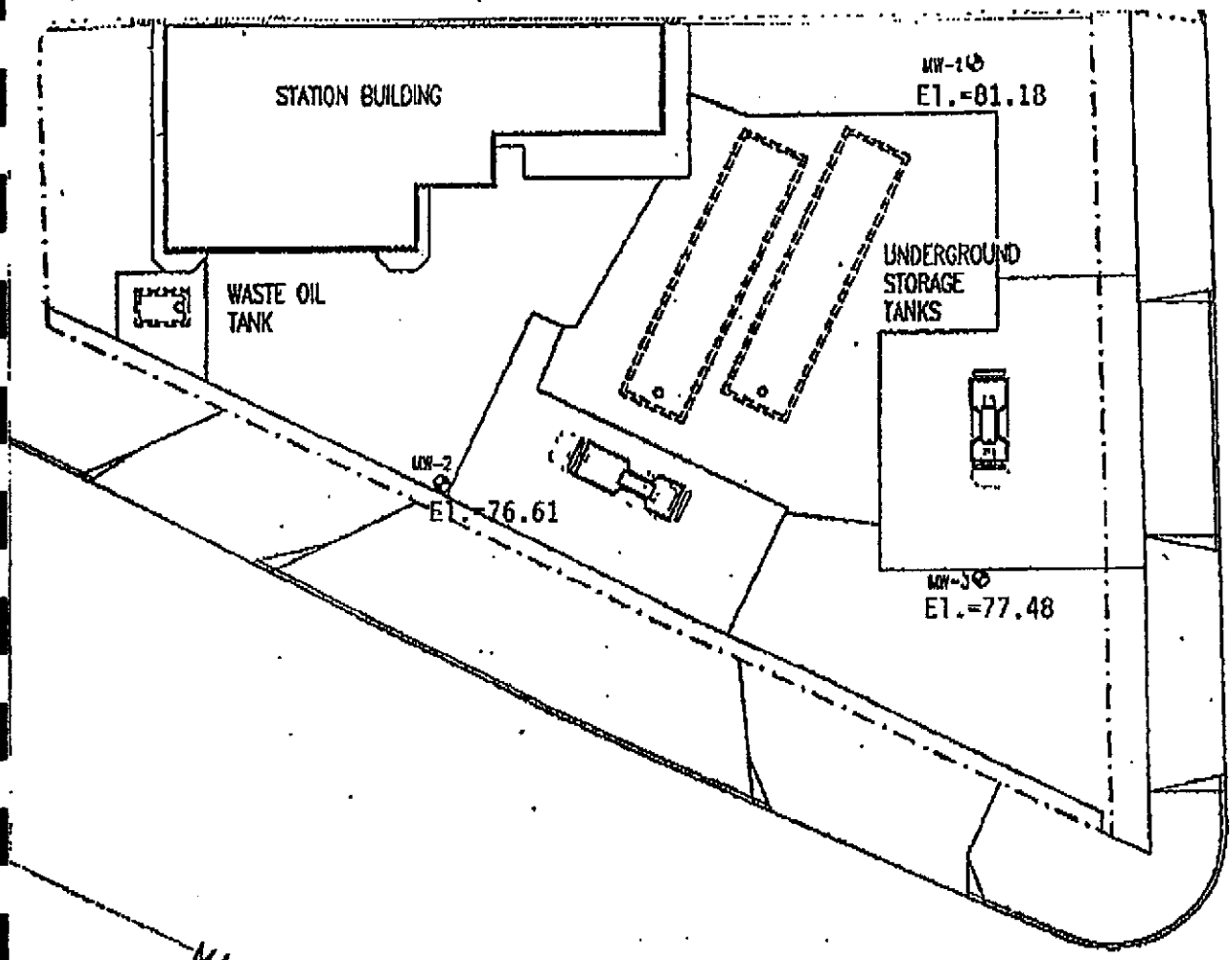
SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	SAMPLE MATRIX	TPH-G 8015	BTEX 8020	TPH-G	TCLP-BTEX	STLC LEAD	PCI	TOTAL # OF CONTAINERS	PRESERVATION
MW3 4-5½'	10/6/92	0859	SOIL	X						1	ICE 2100156
MW-3 9-10.5'	10/6/92	0908	"	X						1	157
MW-3 12-13.5'	10/6/92	0920	"	X						1	158
MW-3 13.5-15'	10/6/92	0933	"	HOLD						1	
										1	
~~S~~ S-1 A-D	10/6/92	1741	"		X	X	X	X		4	↓ 159AD

SAMPLER'S RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N
K. Bishop	ROUX	10/6/92	1447			SAL	10-6-92	2:47 pm	
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N

DELIVERY METHOD: HAND

ANALYTICAL LABORATORY: SEQUOIA

COMMENTS: STANDARD TURNAROUND TIME



NOTE: ELEVATIONS SHOWN ARE TOP OF CASING.
MSL (navd)

EXPLANATION:

- MW-1 — PROPOSED MONITORING WELL LOCATION AND DESIGNATION
- UNDERGROUND STORAGE TANK
- PROPERTY BOUNDARY LINE
- FORMER PUMP ISLAND
- NEW PUMP ISLAND

SOURCE:
MAP MODIFIED FROM BLUEPRINT PROVIDED BY, UNOCAL 76, 01/92.

0' 20' 40'
APPROXIMATE SCALE

ROUX ASSOCIATES
ENVIRONMENTAL CONSULTING & MANAGEMENT

COMPILED BY:	P.S.
PREPARED BY:	R.P.
PROJECT MNGR.	P.S.
DATE:	05/92
SCALE:	AS SHOWN
PROJECT NO.	27001W
FILE NAME:	UN1871YY

PREPARED FOR: UNOCAL

TITLE:
LOCATION OF PROPOSED MONITORING WELLS
UNOCAL SERVICE STATION NO. 1871

FIGURE 4

APPENDIX E

Laboratory Analytical Reports
and
Chain-of-Custody Documentation
Ground Water Samples

GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545
(510) 352-4800

FACSIMILE COVER SHEET

TO: PAUL SUPPLEE

COMPANY: ROUX

FROM: Tom Leavitt

DATE: 11/23

RE:

COMMENTS:

5 pages including cover.

If there are any problems with this transmission, please call (510) 352-4800.

Let me know

if you cant Read?!

TL

TABLE 1

FIELD MONITORING DATA

WELL NO.	MONITORING DATE	CASING DIA. (IN)	TOTAL WELL DEPTH (FT)	WELL ELEV. (FT)	DEPTH TO WATER (FT)	PRODUCT THICKNESS (FT)	STATIC WATER ELEV. (FT)	PURGED WELL VOLUMES	pH	TEMPERATURE (F)	CONDUCTIVITY (u MHOS/CM)
MW-1	11-92	4"	25.0	81.18	16.18	—	65.00	3	6.98	71.1	978
MW2	↓	4"	25.0	76.61	12.05	—	64.56	2	7.17	73.0	784
MW3	↓	4"	25.0	77.48	13.24	—	64.24	2	7.01	72.8	850

Notes: 1. Static water elevations referenced to Mean Sea Level (MSL).
2. Physical parameter measurements represent stabilized values.
3. pH values reported in pH units.
4. Static water levels corrected for floating product (conversion factor = 0.80).

3868

From Cline
30900
1600

Frank Cline
Gettler-Ryan Inc.
2150 W. Winton Avenue
Hayward, CA 94545

Date: 11/17/1992
NET Client Acct No: 67900
NET Pacific Job No: 92.49182
Received: 11/05/1992

Client Reference Information

Unocal, 96 MacArthur Blvd./Harrison, Oakland, Job 3868.01

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:

Julee Skamarack
Laboratory Manager

JS:rot
Enclosure(s)

PRELIMINARY REPORT

Client No: 67900
Client Name: Gettler-Ryan Inc.
NET Job No: 92.49182

Date: 11/17/1992

Page: xxx 2

Ref: Unocal, 96 MacArthur Blvd./Harrison, Oakland, Job 3960.01

Descriptor, Lab No. and Results

Parameter	Method	Reporting Limit	MW-1 11/03/1992 15:48 142975	MW-2 11/03/1992 15:59 142976	Units
TPH (Gas/BTXE,Liquid)					
METHOD 5030 (GC,FID)			--	--	
DATE ANALYZED			11-09-92	11-09-92	
DILUTION FACTOR*			1,000	1	
as Gasoline	5030	0.05	260	0.14	mg/L
METHOD 8020 (GC,Liquid)			--	--	
DATE ANALYZED			11-09-92	11-09-92	
DILUTION FACTOR*			1,000	1	
Benzene	8020	0.5	2,300	2.2	ug/L
Ethylbenzene	8020	0.5	3,700	ND	ug/L
Toluene	8020	0.5	4,600	ND	ug/L
Xylenes (Total)	8020	0.5	17,000	2.0	ug/L
SURROGATE RESULTS			--	--	
Bromofluorobenzene	5030		89	89	% Rec.

PRELIMINARY REPORT

Client No: 67900
Client Name: Gettler-Ryan Inc.
NET Job No: 92.49182

Date: 11/17/1992
Page: xxx 3

Ref: Unocal, 96 MacArthur Blvd./Harrison, Oakland, Job 3860.01

Descriptor, Lab No. and Results

Parameter	Method	Reporting Limit	MW-3 11/03/1992 15:42 142977	Trip 142978	Units
TPH (Gas/BTXE,Liquid)					
METHOD 5030 (GC,FID)			--	--	
DATE ANALYZED			11-11-92	11-09-92	
DILUTION FACTOR*			1	1	
as Gasoline	5030	0.05	2.1 ✓	ND	mg/L
METHOD 8020 (GC,Liquid)			--	--	
DATE ANALYZED			11-11-92	11-09-92	
DILUTION FACTOR*			1	1	
Benzene	8020	0.5	120 ✓	ND	ug/L
Ethylbenzene	8020	0.5	38	ND	ug/L
Toluene	8020	0.5	15	ND	ug/L
Xylenes (Total)	8020	0.5	200	0.7	ug/L
SURROGATE RESULTS			--	--	
Bromofluorobenzene	5030		93	86	% Rec.

PRELIMINARY REPORT

APPENDIX F

Soil and Water Disposal Documentation

Dillard Trucking, Inc.

ENVIRONMENTAL SERVICES
P.O. BOX 218 BYRON, CALIFORNIA 94514
(510) 634-6850 FAX (510) 634-0569

October 30, 1992

Roux Associates
1855 Gateway Blvd., Suite 770
Concord, CA 94520

Fax# (510) 687-1258

Attn: Todd Ramsden

Re: Unocal #1871 - 96 McArthur Blvd., Oakland, CA
Removed 3 Cubic Yards of Drill Cuttings

Dear Todd:

Please be advised that the drill cuttings from the above referenced site have been removed. They were taken to BFI Landfill, Livermore on October 29, 1992.

Enclosed please find a copy of the Non Hazardous Special Waste Manifest for your records.

I trust that you will find everything in order. If you have any questions, please do not hesitate to call.

Sincerely,

DILLARD TRUCKING, INC.

Donna L. Pedersen

Donna L. Pedersen
Estimator

DLP/st

cc: file

BFI Waste Systems™
BROWNING-FERRIS INDUSTRIES

No. 714647

NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

Generator Name: UNOCAL Marketing
Generating Location: UNOCAL Station #1871

Address: P. O. Box 5155
San Ramon, Ca. 94583

Address: 96 McArthur Blvd
Oakland, CA

Phone No.: 510 — 277 2368

Phone No.: ___ — ___

BFI Waste Code: CA 405 | Description of Waste: Non Hazardous Soil | Quantity: 0063 | Units: Y | Containers No.: 02 | Type: T

Type: D - Drum, C - Carton, B - Bag, T - Truck, P - Pounds, Y - Yards, O - Other

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name: [illegible] for General Manager | Signature | Shipment Date: 10 29 92

TRANSPORTER

Truck No.: | Phone No.: 510-634-6850

Transporter Name: Dillard Trucking, Inc. 1430/25 | Driver Name (Print): [illegible]

Address: P. O. Box 218
Byron, California 94544

Vehicle License No./State: 3H79428

Vehicle Certification: 3CD840

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature | Shipment Date: 10 29 92

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature | Delivery Date: 10 29 92

DESTINATION

Site Name: B.F.I. Vasco Road Landfill | Phone No.: 510 — 447 0491

Address: 4001 North Vasco Rd., Livermore, Ca. 94550

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

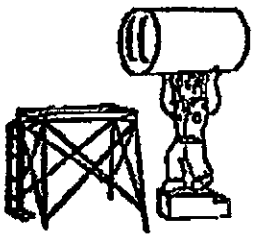
Name of Authorized Agent | Signature | Receipt Date: 10 29 92

PASS CODE:

10/96 BFI250-7

TRANSPORTER RETAIN

DRUM DATA SHEET



Armour Petroleum Service and Equipment Corporation

SINCE 1980

P.O. BOX 507 • VACAVILLE, CA 95696-0507

FACILITY NAME: Unocal 1871

ADDRESS: 96 Mac Arthur Oakland

NUMBER OF DRUMS ON SITE: 6 CONSULTANT Roux

ARE DRUMS LABELED? YES 2 NO 4 TYPE OF LABEL

DRUM	TYPE	GAL. H2O	GAL. GAS.	GAL. REMOVED	GAL. LEFT ON SITE	COMMENTS:
1	E	18	∈	18	∈	removed from site
2	E	55	∈	55	∈	removed from site
3	E	∈	∈	∈	∈	removed from site
4	E	∈	∈	∈	∈	removed from site
5	E	∈	∈	∈	∈	removed from site
6	E	∈	∈	∈	∈	removed from site
7						
8						
9						
10						
11						
12						

LIST BELOW THE DRUMS THAT WERE NOT EMPTIED

DRUM	TYPE	LABELING (IF ANY)	CONTENT	GALLONAGE LEFT IN DRUM	REASON FOR NOT EMPTYING DRUM
1					
2					
3					
4					
5					
6					
7					
8					

TOTAL GAL. REMOVED: 73 EMPTY BARRELS LEFT ON SITE: ∈

BARRELS REMOVED: 6 TOTAL # OF BARRELS REMAINING ON SITE: ∈

FIELD TECHICIAN: C Rardy DATE: 10-21-92

CONTRACTOR'S LICENSE NUMBER 498721

VACAVILLE (707) 437-6668 SACRAMENTO (916) 441-2886 FAX (707) 437-4357

ARMOUR PETROLEUM SERVICE and EQUIPMENT CORPORATION

P.O. BOX 507, VACAVILLE, CA. 95696-0507

SHIPPING PAPER

PAGE# 1 2

TO: SOLANO COMMUNITY COLLEGE
1600 California Drive
Vacaville, California.

FROM: Unocal 1871
96 MacArthur
Oakland

QTY	HM	DESCRIPTION	WEIGHT /GALLONS
( ) 55 gallon drum		Gasoline, Flammable liquid UN1203	
( ) 55 gallon drum		Diesel Fuel, Combustible liquid UN1993	
(2) 55 gallon drum		>99% WATER <1% GASOLINE FLAMMABLE LIQUID n.o.s., UN 1203 (CONTAINS GASOLINE)	73 gallons
	X	Placards Provided for this Load	

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SIGNED: Charlyn McKinney DATE 10-21-92

SHIPPER: Unocal CARRIER'S # CA 10759
PER: Louie VEHICLE # 473175
DATE: 10-21-92

Emergency #: Day 707 4316668
n.t. 707 448 1241