WELL CONSTRUCTION PERMIT

for

Kahului-UNOCAL Monitor Wells
Well Nos. 5327-01M to 28M
Kahului, Maui

TO: UNOCAL Refining & Marketing
P.O. Box 659
Honolulu, Hawaii 96809

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", your application to construct 28 monitor wells (Well Nos. 5327-01M to 28M) within Tax Map Key: 3-7-11:21 is approved, subject to the following conditions:

1. The Division of Water Resource Management (DWRM), Geology-Hydrology Section, shall be notified at 548-7543, before any work by this permit commences.

2. The wells shall be used for monitoring and recovery of contaminants only.

3. The following shall be submitted to DWRM, P.O. Box 373, Honolulu, Hawaii 96809 within 30 days after completion of the wells:
   b. As-built sectional drawings of the wells.
   c. Plot plan and map showing the exact locations of the wells.
   d. Complete pumping test record, including time, pumping rate, drawdown, chloride content, and water quality data.
   e. Periodic reports of monitoring and testing results.
4. The applicant shall comply with all applicable laws, rules, and ordinances.

5. This permit may be revoked if work is not started within six months of the date of issuance or if work is suspended or abandoned for six months. The work shall be completed within two years of the date of issuance.

6. Upon completion of monitoring operations, the applicant shall obtain a well construction permit to seal the wells with cement grout in a manner approved by the Commission.

SEP - 4 1990

WILLIAM W. PATY

Date of Issuance

Enc. (Well Completion Report form)
cc: USGS
    Department of Health
    Drinking Water Branch
    Ground Water Protection Program
    Maui Department of Water Supply
    Dames & Moore
APPLICATION FOR

X WELL CONSTRUCTION PERMIT
X PUMP INSTALLATION PERMIT

INSTRUCTIONS: Please print or type and send completed application with attachments to the Division of Water and Land Development, P.O. Box 371, Honolulu, Hawaii 96809. Application must be accompanied by a non-refundable filing fee of $25.00 payable to the Department of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 146-7442, Hydrology/Geology Section for assistance.

1. WELL LOCATION

Island MAUI
Tax Map Key MAUI 3-7-11-21
Address HOBON AVENUE, KAHULU, MAUI, HAWAII 96732
(Attach a USGS map (scale 1"=2000') and property tax map showing well location referenced to established property boundaries.)

2. WELL OWNER LANDOWNER

Firm Name UNOCAL REFINING & MARKETING
Contact Person MR. KEN HIGA
Address P. O. BOX 659
HONOLULU, HAWAII 96809
Phone (808) 522-7603

Firm Name A & B Properties Inc.
Contact Person
Address P. O. Box 3440
Honolulu, HI 96801
Phone (808) 525-6611

3. PROPOSED CONTRACTOR FOR: 

Name DAMES & MOORE
Address 1144 10TH AVENUE, SUITE 200
HONOLULU, HAWAII 96816
Phone (808) 735-3585

4. PROPOSED WORK

X Drill New Well
X Install New Pump

❑ Alter
❑ Replace Pump
❑ Redrill
❑ Abandon
❑ Modify Pump
❑ Seal
❑ Pump Installation

(Briefly describe the proposed work and fill in the diagram on the back of this form.)

5. PROPOSED USE

❑ Municipal (including hotels, stores, etc.)
❑ Military
❑ Domestic (individual, noncommercial water systems)
❑ Industrial
❑ Irrigation (specify)
❑ Other (specify) MONITOR/RECOVERY

6. PROPOSED AMOUNT OF WITHDRAWAL

1440 gallons per day 1 GAL/MIN.

7. PROPOSED PUMP INFORMATION

Pump Type: ❑ Vertical Turbine ❑ Submersible ❑ Centrifugal
Motor: ❑ Diesel ❑ Gas ❑ Electric: ❑ Rated Horsepower
Rated Pump Capacity 5 gallons per minute (gpm)

Well Owner (print) UNOCAL
Signature
Date 1/20/86

Landowner (print)
Signature
Date

For Official Use Only:
Field Checked By
Latitude
Hydrologic Unit
State Well No. 5327-011, 02M
Date
Longitude
Briefly describe the proposed work: 2 RECOVERY PITS

RECOVERY PIT CONSTRUCTED BY EXCAVATING ENOUGH SOIL TO ALLOW FOR APPROXIMATELY 2 FEET OF STANDING WATER. PUMP USED TO CREATE A CONSTANT GROUNDWATER DRAW DOWN WHICH ALLOWS ACCUMULATION OF FLOATING GASOLINE/DIESEL IN THE PIT WHERE THE FUEL CAN BE RECOVERED.

PROPOSED SECTION OF WELL

Elevation at top of casing 6 ft., msl.

Cement Grout 1.5 ft.

Hole Dia. = 2.5' in.

Total Depth = 4.5 ft.

Rock Packing 3 ft.

Ground Elev. = 6' ft., msl*

Solid Casing:
- Material: 55 GAL DRUM
- Length: 1 ft.
- Diameter: 24 in.
- Wall thickness: 1/32 in.

Casing: /x/Perforated / /Screen
- Material: DRUM W/SLOTS
- Length: 2.5 ft.
- Diameter: 24 in.
- Wall thickness: 1/32 in.
- Openings: 45 sq. in./L.F.

Open Hole:
- Length: 0'
- Diameter: 28 in.

*Approximate elevation at time of filing application. Final elevation (msl) by a surveyor licensed by the State must be submitted at start of construction.
GENERAL LOCATION OF SITE

MAP OF AREA

SCALE 1:24,000

Reference:
U.S.G.S. Topographic Map
APPLICATION FOR

X WELL CONSTRUCTION PERMIT
PUMP INSTALLATION PERMIT

INSTRUCTIONS: Please print or type and send completed application with attachments to the Division of Water and Land Development, P.O. Box 373, Honolulu, Hawaii 96829. Application must be accompanied by a non-refundable filing fee of $25.00 payable to the Department of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 548-1541, Hydrology/Gisology Section for assistance.

1. WELL LOCATION INCLUDES 26 MONITORING WELLS

Island MAUI Tax Map Key MAUI 3-7-11-21
Address HOBRON AVENUE, KAHULUI, MAUI, HAWAII 96732
(Attach a USGS map (scale 1"=2000') and property tax map showing well location referenced to established property boundaries.)

2. WELL OWNER

Firm Name UNOCAL REFINING & MARKETING
Contact Person MR. KEN HIGA
Address P. O. BOX 659
HONOLULU, HAWAII 96809
Phone (808) 522-7603

3. PROPOSED CONTRACTOR FOR: ☑ Well Drilling ☐ Pump Installation

Name DAMAGES & MOORE Phone (808) 735-3585
Address 1144 10TH AVENUE, SUITE 200 Contractor's License No. N/A

4. PROPOSED WORK

☐ Drill New Well ☐ Alter ☐ Deepen ☐ Seal ☐ Redrill ☐ Abandon ☐ Modify Pump
☐ Install New Pump ☐ Replace Pump ☐ Seal

(Briefly describe the proposed work and fill in the diagram on the back of this form.)

5. PROPOSED USE

☐ Municipal (including hotels, stores, etc.) ☐ Military
☐ Domestic (individual, noncommercial water systems) ☐ Industrial
☐ Irrigation (specify) ☐ Other (specify) MONITOR

6. PROPOSED AMOUNT OF WITHDRAWAL 0 gallons per day

7. PROPOSED PUMP INFORMATION

NONE

Pump Type: ☑ Vertical Turbine ☐ Submersible ☐ Centrifugal Motor: ☐ Diesel ☐ Gas ☐ Electric: ____________________________ Rated Horsepower Rate Pump Capacity _________ gallons per minute (gpm)

Well Owner (print) UNOCAL Signature ____________________________ Date 8/2/1999

Landowner (print) ____________________________ Signature ____________________________ Date

For Official Use Only: Latitude ____________________________ Hydrologic Unit State Well No. 5327-03M+28M

Field Checked By ____________________________ Longitude ____________________________

Date ____________________________
Briefly describe the proposed work: INCLUDED 26 WELLS.

CONSTRUCT 26 MONITORING WELLS TO CHARACTERIZE THE EXTENT
OF FLOATING GASOLINE/DIESEL AT THE SITE AND TO SKIM ANY POTENTIAL FUEL.

PROPOSED SECTION OF WELL

Elevation at top of casing
GROUND TO -2.5 ft., msl.

Ground Elev. = 6 ft., msl

Cement Grout 0.5 to 1 ft.

Hole Dia. 8 in.

Total Depth 5 to 6 ft.

Rock Packing 5.5 ft.

Solid Casing:
Material PVC
Length 0.5 TO 3 ft.
Diameter 4" in.
Wall thickness SCHEDULE 40 in.

Casing: / /Perforated /X/Screen
Material PVC
Length 5' ft.
Diameter 4" in.
Wall thickness SCHEDULE 40 in.
Openings 5 sq. in./L.F.

Open Hole: NONE
Length
Diameter

*Approximate elevation at time of filing application. Final elevation (msl) by a surveyor licensed by the State must be submitted at start of construction.
MAP OF AREA

SCALE 1:24,000

CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT 20 FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

Reference:
U.S.G.S. Topographic Map
<table>
<thead>
<tr>
<th>DATE</th>
<th>AMOUNT</th>
</tr>
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<tbody>
<tr>
<td>8/21/90</td>
<td>$50.00</td>
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**UNOCAL**

Union Oil Company of California
1650 East Golf Road
Schaumburg, Illinois 60196

No 0340

August 21, 1990

Pay to the order of Dept. of Land & Natural Resources $50.00******

******Fifty and no/100********************************************** Dollars

Continental Bank
of Oakbrook Terrace
Oakbrook Terrace, IL 60181
or if desired Continental Bank
Chicago, IL 60693

Field Disbursement Account

Fred A. Devereux
Manager Division Services

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Reference:
Parker Engineering & Construction Co.
General Arranged, Marketing Station
Kahului, Maui, Hawaii
For: Union Oil Company of California
Dated: Nov. 30, 1959

Legend:
- DRAWDOWN/RECOVERY WELL LOCATION

Maui Petroleum Site, Kahului, Maui