

Exirt. Fuel B3 (DB)

III  
5/16/86  
PWJ

# Mobil Oil Corporation

612 SOUTH FLOWER STREET  
P.O. BOX 2122  
LOS ANGELES, CALIFORNIA 90051

#466

May 9, 1986

Mr. Dale C. Bowyer  
California Regional Water  
Quality Control Board  
1111 Jackson St., Room 6040  
Oakland, CA 94607

RE: MOBIL OIL CORPORATION  
SERVICE STATION 10-LNO  
3315 HIGH STREET  
OAKLAND, CALIFORNIA

RECEIVED

MAY 10 1986

Dear Mr. Bowyer:

Please find enclosed our consultant's report and proposal for additional work at the above location. Due to the fact that a sheen was present during the removal of steel tanks, Mobil will install three (3) monitoring wells to determine extent of contamination and groundwater direction.

Your office will be provided a copy of the results from further investigation. If you have any questions, please call my office at (213) 683-5220 or 6335.

Sincerely,



R. J. Edwards  
Region Environmental  
Coordinator

CEG:ram  
Enclosure  
(61910)

c.c.: Mr. T. M. Geron  
Alameda County  
Environmental Health Dept.  
470 - 27th Street, Room 324  
Oakland, California 94612



**KAPREALIAN ENGINEERING, INC.**

Consulting Engineers

535 Main Street

Martinez, Ca. 94553

(415) 372-5444

KEI-J86-042

May 6, 1986

Mobil Oil Corp.  
P.O. Box 127  
Richmond, CA 94807  
Attn: Mr. Bill Johnson

Re: Soil/Water Investigation Report - Mobil Service  
Station #10-LNO, at 3315 High St., Oakland, CA

Dear Mr. Johnson:

Enclosed is our report on soil/water investigation of the  
subject site including our recommendations.

If you have any questions regarding this project, please do  
not hesitate to call me at (415) 228-1882.

Sincerely,

Mardo Kaprealian  
President

MK:bl

Attachment: Report on Soil/Water Investigation  
Proposal for Soil/Water to determine the  
extent of the contamination.

cc: C. Galloway



## KAPREALIAN ENGINEERING, INC.

Consulting Engineers

535 Main Street

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KEI-J86-042

May 6, 1986

Soil/Water Sampling Report  
Mobil Service Station #10-LNO  
3315 High Street  
Oakland, California

### INTRODUCTION

This report presents the results of KEI investigation conducted at the Mobil Service Station No. 10-LNO in Oakland, California. KEI responsibilities included soil/water sample collection to determine if soil/water contamination is present, oversee tanks and soil removal, laboratory analysis and report.

### FIELD INVESTIGATION

Our Field Investigation was conducted on April 9, 1986, and consisted of supervising soil removal, as well as soil/water sampling. During inspection the groundwater level was at about 8 feet and petroleum sheen was observed on the water surface in the excavation. Slight petroleum odor was noticeable in the soil which was removed and stockpiled on the site.

One composite soil sample was taken which consisted of 3-grab sample taken at about 2-inch above the groundwater level from the three walls of the excavation. The intent was to determine the extent of soil contamination (if any) above the groundwater table surface. The samples were taken in accordance with the California Regional Water Quality Control Board Guidelines.

The contaminated groundwater was extracted by the H&H Services, prior to installation of the new double well underground storage tanks. The subsurface soils exposed in the excavations consisted primarily of silty sandy with clay.

The result of the chemical analysis for the composite soil sample showed non detectable limit.

KEI-J86-042  
May 6, 1986

CONCLUSION AND RECOMMENDATIONS

Based on our site inspection and observations of the sheen on the groundwater surface including odor noted in the soil removal, it is difficult to determine the exact extent of the contamination on the water table at this site. However, in a preliminary basis it appears that contamination (if any) is most probably confined to the underground tank storage area. We recommend that three monitoring wells be installed on the site in order to confirm the extent that the contamination has migrated (if any).

The results of this study are based on the data obtained from the field and laboratory investigations. We have analyzed this data using what we believe to be current applicable engineering and principles in the San Francisco Bay Area. We make no warranty, expressed or implied, except that our services have been performed in accordance with those techniques and principles generally accepted at this time and location.

More extensive studies including additional subsurface investigation can tend to reduce the inherent uncertainties associated with studies of this type. The proposal to install three observation wells/borings is attached for your review and approval.

Attachment:       Site Plan  
                  Laboratory Analysis



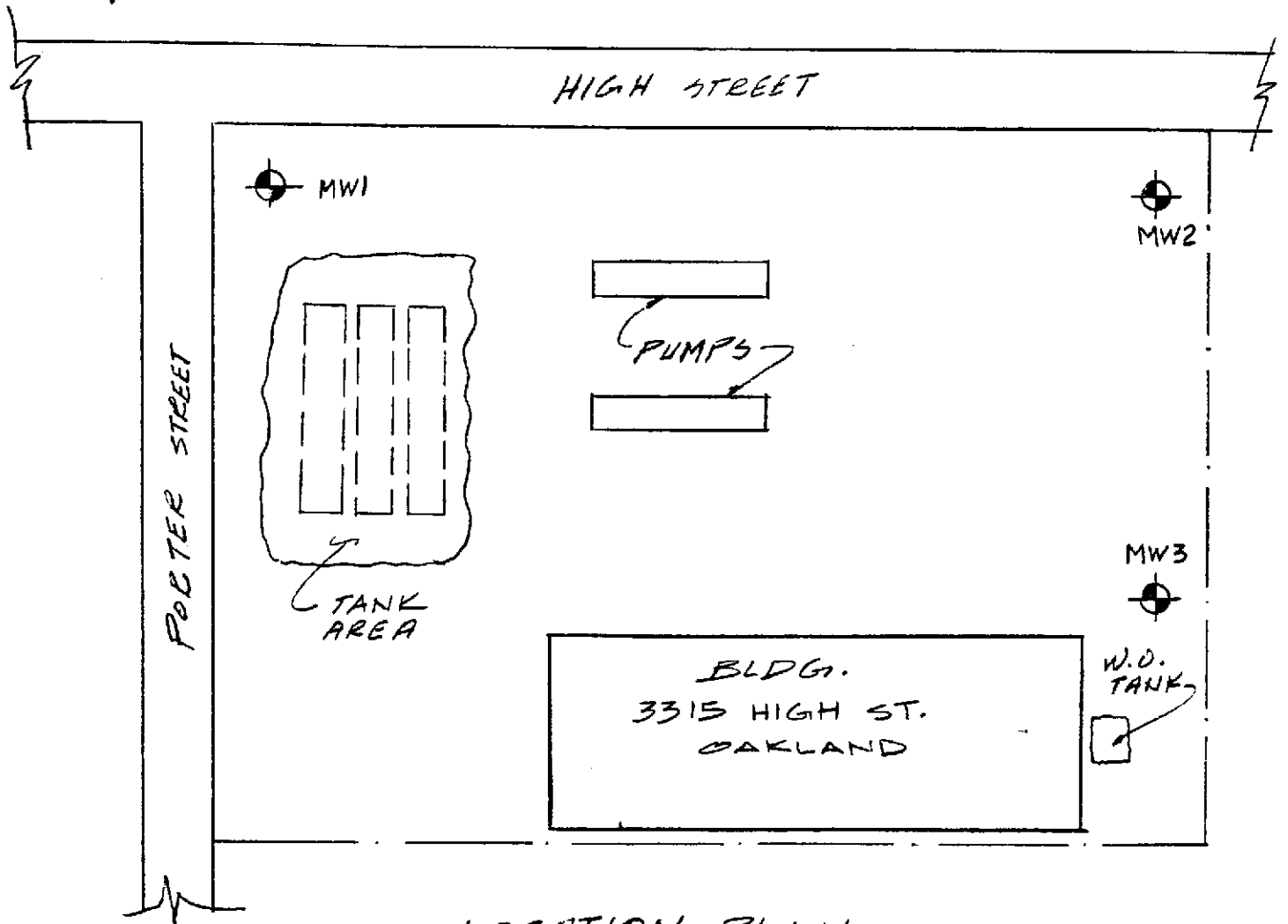
**KAPREALIAN ENGINEERING, INC.**

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LOCATION PLAN

N.T.S.


 MW (MONITORING WELL)

TABLE - 1

Results of Groundwater Analysis

<u>Parameter</u>	<u>MW #1</u>	<u>MW #2</u>	<u>MW #3</u>
Petroleum Total Hydrocarbons (ppm)	<0.05	<0.05	<0.05
Benzene (ppm)	<0.001	<0.001	<0.001
Toluene (ppm)	<0.001	<0.001	<0.001
Xylene (ppm)	<0.001	<0.001	<0.001
Depth (feet)	10.1	10.0	9.6
Free Product (inches)	0.0	0.0	0.0
Odor	ND	ND	ND
Sheen	ND	ND	ND

Results of Soil Analysis

Petroleum Total Hydrocarbons (ppm)	<1.0	<1.0	<1.0
Odor	ND	ND	ND

ND = None Detected



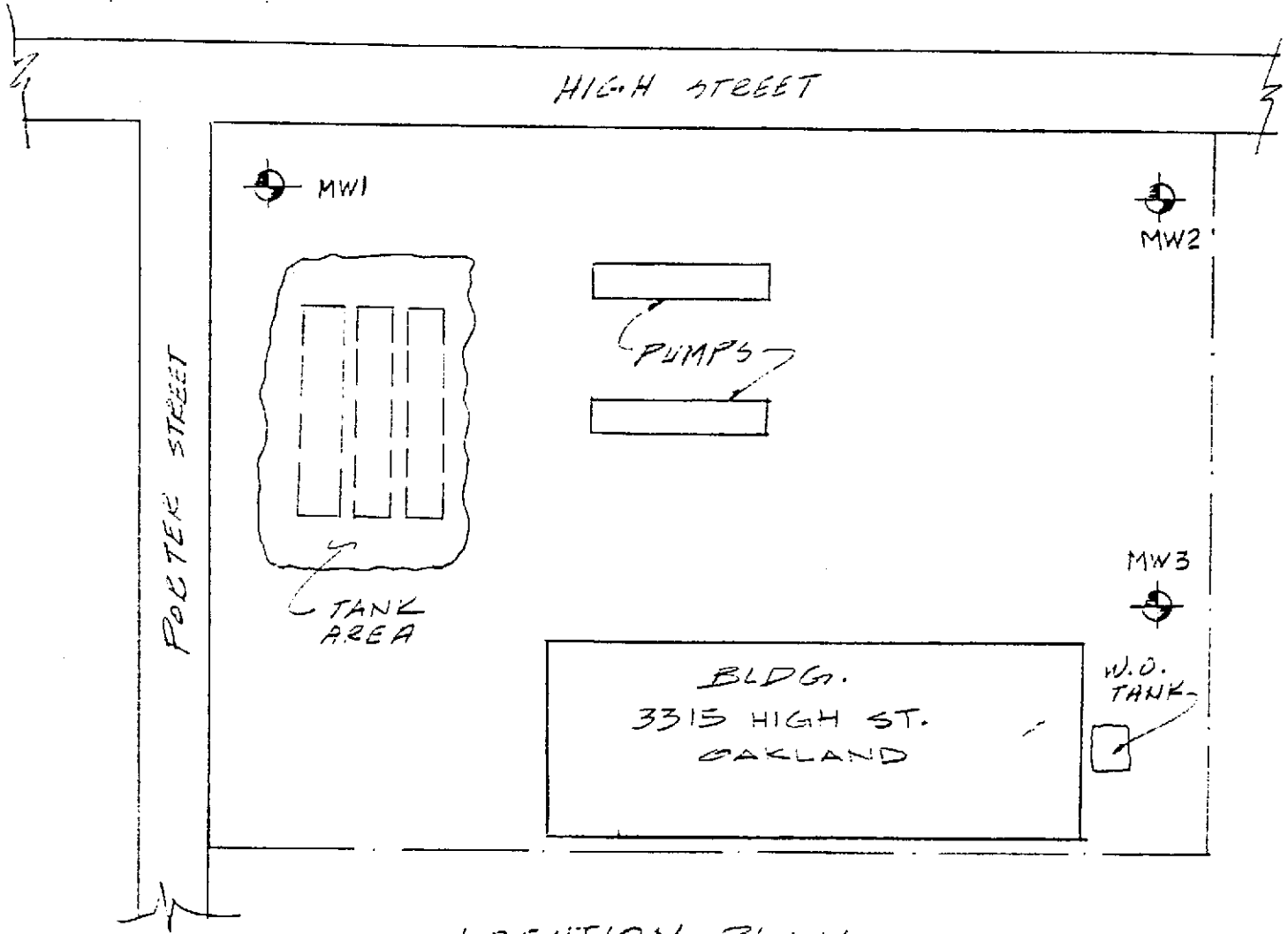
# KAPREALIAN ENGINEERING, INC.

Consulting Engineers


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LOCATION PLAN  
N.T.S.

 MW (MONITORING WELL)

DRILL RIG Hollow Stem			SURFACE ELEVATION -----		LOGGED BY JCW				
DEPTH TO GROUNDWATER As noted			BORING DIAMETER 8"		DATE DRILLED 7/29/86				
DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
ASPHALT, BASE ROCK AND FILL									
SILTY CLAY with rock fragments; dry									
Cobbles; damp				5					
Grading to clayey gravel; damp				10			▽		
GRAVELLY CLAY, with some fine sand; damp to moist No product odor				15					
Increasing clay at 17 feet, moist; no product odor				20					
				EXPLORATORY BORING LOG					
				MOBIL OIL CORPORATION HIGH STREET, OAKLAND					
				PROJECT NO. H182-21		DATE 8/86		BORING NO. MW-1	



DRILL RIG Hollow Stem		SURFACE ELEVATION ----		LOGGED BY JCW					
DEPTH TO GROUNDWATER As Noted		BORING DIAMETER 8"		DATE DRILLED 7/29/86					
DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
GRAVELLY CLAY (CONTD)	light brown	stiff to very stiff	CL						
CLAYEY GRAVEL; wet, no product odor	light brown	dense	GC	25			▽ =		
CLAYEY SAND; grading to sandy clay	light brown	medium dense	SC	35					
TOTAL DEPTH = 35.0 feet									
				<b>EXPLORATORY BORING LOG</b>					
				MOBIL OIL CORPORATION HIGH STREET, OAKLAND					
				PROJECT NO.		DATE		BORING NO.	
				H182-21		8/86		MW-1	

MOBIL OIL CORPORATION  
OAKLAND, CALIFORNIA

MW-1

Well completed to 35.0 feet in depth with 2-inch Class 160 PVC casing, flush-threaded joints. Screen (.020-inch slot) set from 7.0 to 35.0 feet. 6 X 12 Monterey sand placed from 5.5 to 35.0 feet, bentonite pellets placed from 5.0 to 5.5 feet, and concrete seal placed from 0 to 5.0 feet.

DRILL RIG Hollow Stem	SURFACE ELEVATION ---	LOGGED BY JCW
DEPTH TO GROUNDWATER As Noted	BORING DIAMETER 8"	DATE DRILLED 7/30/86

DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
ASPHALT AND BASE ROCK									
SILTY CLAY with rock fragments; dry	tan	stiff	CL						
Large rock fragments				5					
Damp; no product odor	moist tan to gray to brown								
Decreasing rock fragments				10					
Slightly sandy No product odor			CL SC	15					
CLAYEY GRAVEL	light brown	dense	GC	20					

				EXPLORATORY BORING LOG			
				MOBIL OIL CORPORATION HIGH STREET, OAKLAND			
				PROJECT NO. H182-21		DATE 8/86	

DRILL RIG Hollow Stem			SURFACE ELEVATION ----			LOGGED BY JCW			
DEPTH TO GROUNDWATER As Noted			BORING DIAMETER 8"			DATE DRILLED 7/30/86			
DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
CLAYEY GRAVEL (CONTD)	light brown to tan	dense	GC	25					
Large gravel		dense to very dense		30					
TOTAL DEPTH = 30.0 feet									
				EXPLORATORY BORING LOG					
				MOBIL OIL CORPORATION HIGH STREET, OAKLAND					
				PROJECT NO.		DATE		BORING NO.	
				H182-21		8/86		NO. MW-2	

MOBIL OIL CORPORATION  
OAKLAND, CALIFORNIA

MW-2

Well completed to 30.0 feet in depth with 2-inch Class 160 PVC casing, flush-threaded joints. Screen (.020-inch slot) set from 7.0 to 30.0 feet. 6 X 12 Monterey sand placed from 5.0 to 30.0 feet, bentonite pellets placed from 4.5 to 5.0 feet, and concrete seal placed from 0 to 4.5 feet.

DRILL RIG Hollow Stem		SURFACE ELEVATION ----		LOGGED BY JCW				
DEPTH TO GROUNDWATER As Noted		BORING DIAMETER 8"		DATE DRILLED 7/30/86				
DESCRIPTION AND CLASSIFICATION			DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
DESCRIPTION AND REMARKS	COLOR	CONSIST.						
ASPHALT AND BASE ROCK								
SILTY CLAY with rock fragments; dry	tan to brown	stiff	CL-	5				
Large rock fragments								
Decreasing rock fragments								
SILTY CLAY, damp No product odor	tan to gray	stiff	CL	10				
		very stiff		15				
				20				
Wet; no product odor								
EXPLORATORY BORING LOG								
MOBIL OIL CORPORATION HIGH STREET, OAKLAND								
PROJECT NO.			DATE			BORING NO.		
H182-21			8/86			NO. MW-3		

DRILL RIG Hollow Stem		SURFACE ELEVATION -----		LOGGED BY JCW					
DEPTH TO GROUNDWATER As Noted		BORING DIAMETER 8"		DATE DRILLED 7/30/86					
DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
DESCRIPTION AND REMARKS	COLOR	CONSIST	SOIL TYPE						
SILTY CLAY (CONTD)	tan to gray	very stiff	CL	25					
CLAYEY GRAVEL; wet			GC						
SILTY CLAY	light brown	very stiff to hard	CL						
CLAYEY GRAVEL	light brown	dense to very dense	GC	30					
TOTAL DEPTH = 30.0 feet									
<b>EXPLORATORY BORING LOG</b>									
MOBIL OIL CORPORATION HIGH STREET, OAKLAND									
PROJECT NO.			DATE		BORING NO.				
H182-21			8/86		MW-3				

MOBIL OIL CORPORATION  
OAKLAND, CALIFORNIA

MW-3

Well completed to 30.0 feet in depth with 2-inch Class 160 PVC casing, flush-threaded joints. Screen (.020-inch slot) set from 7.0 to 30.0 feet. 6 X 12 Monterey sand placed from 5.0 to 30.0 feet, bentonite pellets placed from 4.5 to 5.0 feet, and concrete seal placed from 0 to 4.5 feet.





# SEQUOIA Analytical Laboratory

2549 Middlefield Road  
Redwood City, CA 94063 • (415) 364-9222

Kaprealian Engineering, Inc.  
535 Main Street, Suite 309  
Martinez, CA 94553  
Attn: Mardo Kaprealian, P.E.  
President

Date Sampled: <sup>7/30/86</sup> 8/4/86  
Date Received: 8/4/86  
Date Reported: 8/26/86

<u>Sample Number</u>	<u>Sample Description</u>	<u>Detection Limit</u>	<u>Total Hydrocarbons</u>
	Mobil-3315 High St. in Oakland, soil	ppm	ppm
6080106	MW-1, 15½-16 feet	1	< 1
6080107	MW-2, 15½-16 feet	1	< 1
6080108	MW-3, 15½-16 feet	1	< 1

NOTE: Analysis was performed using EPA methods 5020 and 8015.

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton  
Laboratory Director

sls



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Kaprealian Engineering, Inc.  
535 Main Street, Suite 309  
Martinez, CA 94553  
Attn: Mardo Kaprealian, P.E.  
President

Date Sampled: 08/18/86  
Date Received: 08/18/86  
Date Reported: 09/04/86

Sample Number  
6081108

Sample Description  
Mobil at High St. in  
in Oakland, MW #1  
Water Sample

## ANALYSIS

	<u>Detection</u>	
	<u>Limit</u>	
Total Hydrocarbons, ppm	0.05	< 0.05
Benzene, ppm	0.001	< 0.001
Toluene, ppm	0.001	< 0.001
Xylenes, ppm	0.001	< 0.001

NOTE: Analysis was performed using EPA methods 5020 and 602.

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton  
Laboratory Director

sls

ZONE 7 OF ALAMEDA COUNTY FLOOD CONTROL  
AND WATER CONSERVATION DISTRICT  
5997 PARKSIDE DRIVE, PLEASANTON, CA 94566 (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

(1) LOCATION OF PROJECT 3315 High Street  
Oakland, California

PERMIT NUMBER 86210  
LOCATION NUMBER \_\_\_\_\_

(2) CLIENT Mobil Oil Corp.  
Name c/o Kapraelian Engineering  
Address 535 Main St. - #308 Phone 415 228-1882  
City Martinez, CA Zip 94553

Approved Craig A. Mayfield Date 29 Jul 86  
Craig A. Mayfield

(3) APPLICANT  
Name HMMP, INC \*  
/Suite 114  
Address 1450 Koll Cir. Phone 408 286-7868  
City San Jose, CA Zip 95112

PERMIT CONDITIONS

Circled Permit Requirements Apply

(4) DESCRIPTION OF PROJECT  
Water Well Construction  Geotechnical \_\_\_\_\_  
Cathodic Protection \_\_\_\_\_ Well Destruction \_\_\_\_\_

**(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. Notify this office (443-9300) at least one day prior to starting work on permitted work and before placing well seals.
3. Submit to Zone 7 within 30 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or bore hole logs and location sketch for geotechnical projects. Permitted work is completed when the last surface seal is placed or the last boring is completed.
4. Permit is void if project not begun within 90 days of approval date.

(5) PROPOSED WATER WELL USE  
Domestic \_\_\_\_\_ Industrial \_\_\_\_\_ Irrigation \_\_\_\_\_  
Municipal \_\_\_\_\_ Monitoring  Other \_\_\_\_\_

(6) PROPOSED CONSTRUCTION  
Drilling Method:  
Mud Rotary \_\_\_\_\_ Air Rotary \_\_\_\_\_ Auger   
Cable \_\_\_\_\_ Other \_\_\_\_\_

Owners No. MW-1

**(B) WATER WELLS, INCLUDING PIEZOMETERS**

1. Minimum surface seal thickness is two inches of cement grout placed by tremie, or equivalent.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic, irrigation, and monitoring wells unless a lesser depth is specially approved.

- C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material.
- D. CATHODIC. Fill hole above anode zone with concrete placed by tremie, or equivalent.
- E. WELL DESTRUCTION. See attached.

WELL PROJECTS

Drill Hole Diameter 8 in. Depth 30 ft.  
Casing Diameter 2 in. Number 160 PVC<sup>a</sup>  
Surface Seal Depth 5 ft.  
Driller's License No. C57; 484288

GEOTECHNICAL PROJECTS

Number \_\_\_\_\_  
Diameter \_\_\_\_\_ in. Maximum Depth \_\_\_\_\_ ft.

(7) ESTIMATED STARTING DATE 7/30/86  
ESTIMATED COMPLETION DATE 8/1/86

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

\* HMMP Representative: Mr. Jeremy Wire  
a Three wells

APPLICANT'S SIGNATURE [Signature] Date 7/25/86



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Kaprealian Engineering, Inc.  
535 Main Street, Suite 309  
Martinez, CA 94553  
Attn: Mardo Kaprealian, P.E.  
President

Date Sampled: 08/18/86  
Date Received: 08/18/86  
Date Reported: 09/04/86

Sample Number

6081110

Sample Description

Mobil at High St. in  
in Oakland, MW #3  
Water Sample

ANALYSIS

	<u>Detection Limit</u>	
Total Hydrocarbons, ppm	0.05	< 0.05
Benzene, ppm	0.001	< 0.001
Toluene, ppm	0.001	< 0.001
Xylenes, ppm	0.001	< 0.001

NOTE: Analysis was performed using EPA methods 5020 and 602.

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton  
Laboratory Director

sls



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Kaprealian Engineering, Inc.  
535 Main Street, Suite 309  
Martinez, CA 94553  
Attn: Mardo Kaprealian, P.E.  
President

Date Sampled: 08/18/86  
Date Received: 08/18/86  
Date Reported: 09/04/86

Sample Number  
6081109

Sample Description  
Mobil at High St. in  
in Oakland, MW #2  
Water Sample

## ANALYSIS

	<u>Detection Limit</u>	
Total Hydrocarbons, ppm	0.05	< 0.05
Benzene, ppm	0.001	< 0.001
Toluene, ppm	0.001	< 0.001
Xylenes, ppm	0.001	< 0.001

NOTE: Analysis was performed using EPA methods 5020 and 602.

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton  
Laboratory Director

sls