KAPREALIAN ENGINEERING, INC.
Consulting Engineers
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KEI-P89-0805.P1
August 30, 1989

Proposal

to

UNOCAL CORPORATION

for

Unocal Service Station #0746

at

3943 Broadway Street

Oakland, California

Submitted By:

Mardo Kaprealian
President

1.0 INTRODUCTION

In August, 1989, Kaprealian Engineering, Inc. (KEI) was hired to obtain soil samples from beneath two 10,000 gallon fuel storage tanks and a waste oil tank during replacement. Water was encountered in the tank pit at a depth of 10 feet. Six sidewall samples were collected at depths of 9.5 feet. After additional excavation of the north sidewall, an additional sample, SW2(R), was collected. Four pipe trench samples were also collected at depths ranging from 5 to 6.5 feet after piping was removed. The soil sample from beneath the waste oil tank was taken at a depth of 8 feet. Two water samples were collected after 1,500 gallons and then 5,000 gallons of water were purged from the pit. Soil sample analyses from the fuel tank pit indicate non-detectable levels of TPH as gasoline and BTX&E for all samples except samples SW1 and SW2, which showed levels of TPH as gasoline at 13 ppm and 290 ppm, respectively. However, the entire area of sample point SW2 has been excavated as indicated on the attached Site Plan, and the new sample SW2(R) showed non-detectable levels of TPH as gasoline and BTX&E. The soil sample from the waste oil tank pit showed non-detectable levels of all constituents analyzed, except TPH as gasoline at 1.6 ppm and toluene at 1.3 ppm. The soil samples, collected from pipe trenches, showed levels of TPH as gasoline ranging from 3.8 to 36 ppm, and benzene ranging from non-detectable to 0.52 ppm. However, the ground water sample analyses from the fuel tank pit (W1) showed 4,700 ppb TPH as gasoline, and 180 ppb benzene, while W2 showed 1,200 ppb TPH as gasoline and 12 ppb benzene.

2.0 SCOPE OF WORK

Per our recommendations described in KEI's report KEI-J89-0805.R1 dated August 30, 1989, additional investigation is necessary to comply with the State and Local Regulatory Agency regulations. Therefore, per the RWQCB guidelines, KEI proposes to perform the work as outlined below:

New Well Installation:

2.1 Coordination with regulatory agencies.

2.2 Installation and construction of three monitoring wells as shown on attached Site Plan.

2.3 Collection of soil samples during the well construction. Soil samples will be collected at five foot intervals and changes in lithology starting at a depth of 5 feet. Soil sampling will continue until the first water table is encountered. Selected soil samples will be analyzed for TPH as gasoline and benzene, toluene, xylenes and ethylbenzene (BTX&E).

2.4 The monitoring wells will be observed for free product and sheen. Water samples will be taken from all monitoring wells and analyzed for TPH as gasoline and BTX&E per the RWQCB guidelines. All analyses will be performed by a state certified laboratory.

2.5 Evaluation of results of the sample analyses as to the current and potential impact on the ground water.

2.6 Preparation and submission of a technical report within 45 days of completion of the soil and water sampling. The report will document the field work performed, chemical analyses of soil/ground water, and offer discussion and recommendations.

3.0 SCHEDULING

KEI is prepared to start the work as soon as this proposal is accepted by the client.

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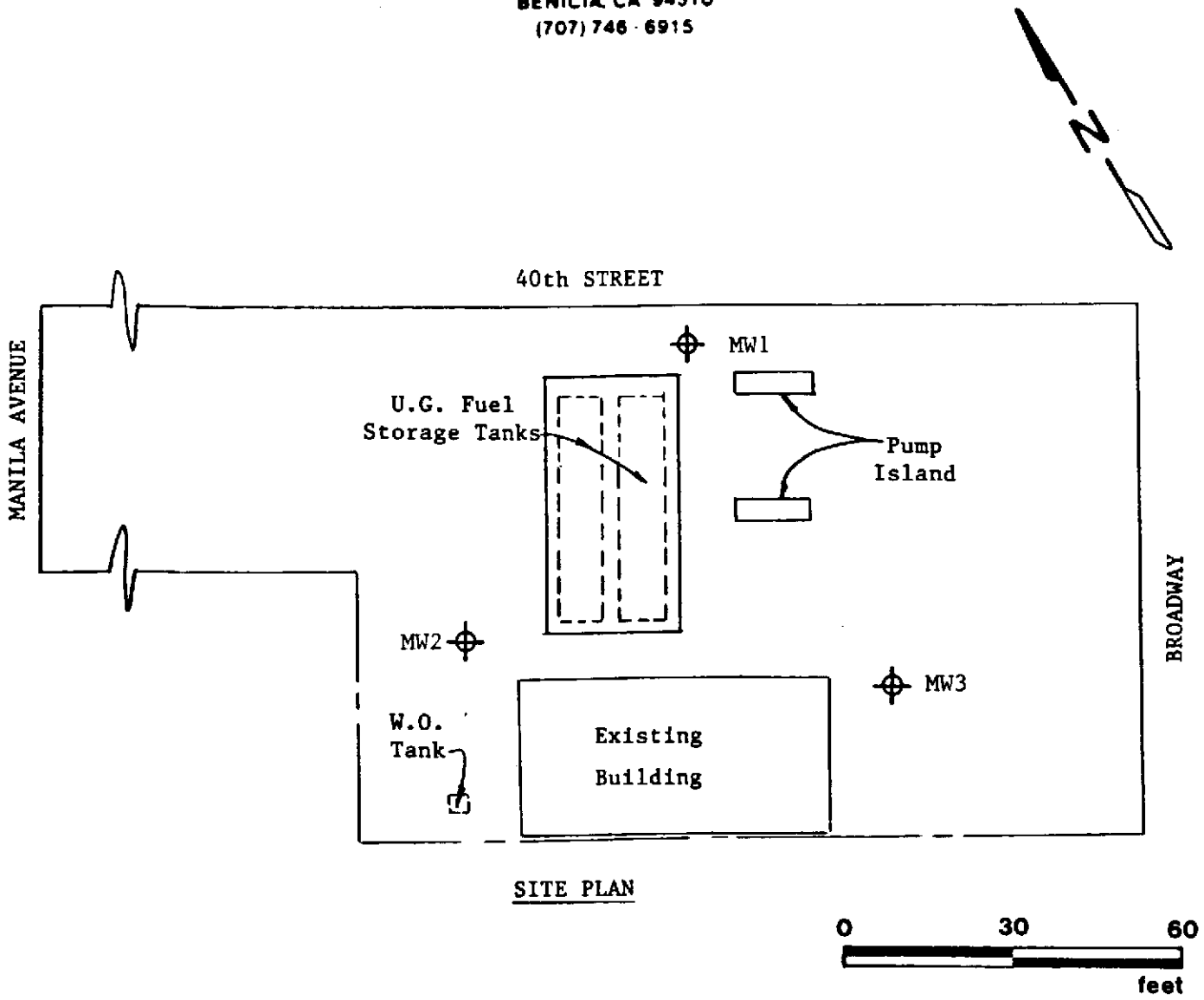

SITE PLAN

Monitoring Well

Unocal Service Station #0746
3943 Broadway Street
Oakland, California

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LOCATION MAP

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