



FAX BEING SENT BY:

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DATE: 7-20-00

TO: Don Huang

FROM: Robert Kitay

NUMBER OF PAGES TO FOLLOW: 10

*****Please Phone If This Fax Is Received Incomplete*****

MESSAGE:



July 18, 2000

WORKPLAN
for a
SOIL AND GROUNDWATER ASSESSMENT
at
5725 Thornhill Drive
Oakland, CA 94611

SOIL AND GROUNDWATER
PROTECTION
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Submitted by:
AQUA SCIENCE ENGINEERS, INC.
208 West El Pintado
Danville, CA 94526
(925) 820-9391

INTRODUCTION

This submittal outlines Aqua Science Engineers, Inc. (ASE)'s workplan for a soil and groundwater assessment at the property located at 5725 Thornhill Drive in Oakland, California (Figure 1). The proposed site assessment activities were initiated by Mr. Mo Mashhoon, owner of the property, to meet the requirements of the Alameda County Health Care Services Agency (ACHCSA) as outlined in their letter dated June 23, 2000 (Appendix A).

BACKGROUND INFORMATION

The subject site has been a gasoline service station since the 1950s. The site dispenses gasoline and has conducted auto repair at the site. A 550-gallon steel underground storage tank (UST) for the storage of waste oil was removed from the site by Penn Environmental in November 1998. Soil samples collected from the excavation contained up to 1,100 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPH-G), 2,700 ppm total petroleum hydrocarbons as diesel (TPH-D) and 4,200 ppm total petroleum hydrocarbons as motor oil (TPH-MO).

On February 4, 1999, Penn Environmental overexcavated contaminated soil surrounding the former waste oil tank. This soil was previously removed but was placed back into the excavation temporarily. This soil was once again removed from the excavation to be transported for disposal. ASE collected confirmation soil samples from two sidewalls of the excavation at that time. Sidewall samples were collected since the bottom of the excavation was saturated. These samples were collected from a backhoe bucket from a depth of approximately 5.5-feet below ground surface (the capillary zone). The soil samples were analyzed for TPH-G, TPH-D, TPH-MO, benzene, toluene, ethylbenzene and total xylenes (collectively known as BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8020. These analyses were requested by Mr. Hernan Gomez of the Oakland Fire Department in a telephone conversation on February 4, 1999. The only compound detected in these two soil samples was 0.040 ppm MTBE in one of the two samples.

In July 1999, ASE drilled boring BH-A in the vicinity of the former waste oil UST using a Geoprobe hydraulic sampling rig in order to collect groundwater samples for analysis and to collect samples to analyze for additional parameters not previously requested by the City of Oakland. No halogenated volatile organic compounds (HVOCs), semi-volatile organic compounds (SVOCs) or polychlorinated biphenols (PCBs) were

detected in either soil or groundwater samples collected from the boring. None of the metal concentrations detected in the soil sample exceeded United States Environmental Protection Agency (US EPA) Region IX preliminary remediation goals (PRGs) for residential soil. Total petroleum hydrocarbons were detected in groundwater samples collected from the boring at 1,700 parts per billion (ppb) in the gasoline range, 10,000 ppb in the diesel range and 4,700 ppb in the motor oil range. The only compounds that were detected at concentrations above California Department of Health Services (DHS) maximum contaminant levels (MCLs) for drinking water were MTBE and cadmium. Although these compounds were detected above drinking water standards, they still represent relatively low concentrations which would not present a threat to human health in non-drinking water scenarios.

PROPOSED SCOPE OF WORK (SOW)

Based on the requirements of the ACHCSA and RWQCB, ASE's proposed scope of work is to:

- 1) Prepare a workplan for approval by the Alameda County Health Care Services Agency (ACHCSA) and Regional Water Quality Control Board (RWQCB).
- 2) Contract with an underground utility locator to locate the underground stream conduit as it passes near the site. ASE will also notify Underground Service Alert (USA) to have all known public utility lines marked.
- 3) Obtain a drilling permit from the Alameda County Public Works Agency (ACPWA) and an excavation permit from the City of Oakland.
- 4) Drill two (2) soil borings using a Geoprobe drill rig. One boring will be located at the southwest corner of the site and the other will be located in the sidewalk south of the site. Collect groundwater samples from the borings for analysis.
- 5) Analyze one soil and one groundwater sample from each boring at a CAL-EPA certified environmental laboratory for TPH-G by modified EPA Method 5030/8015, TPH-D and TPH-MO by modified EPA Method 3550/8015 and BTEX and MTBE by EPA Method 8020. The groundwater samples will also be analyzed for dissolved cadmium by EPA Method 6010.

6) Prepare a report detailing the methods and findings of the sampling.

Details of the assessment are presented below.

TASK 1 - PREPARE A WORKPLAN AND HEALTH AND SAFETY PLAN

Based on the site history, analytical results of the soil samples collected during the previous soil assessment, and the requirements of the ACHCSA and RWQCB, ASE has prepared this workplan and a site-specific health and safety plan. A nearby hospital is designated in the site safety plan as the emergency medical facility of first choice. A copy of the site specific health and safety plan will be available on-site at all times.

TASK 2 - LOCATE SUBSURFACE UTILITY LINES

ASE will contract with a subsurface utility line locator to locate underground utility lines in the site vicinity, and in particular, the location of the underground creek conduit as it passes near the site. ASE will also notify Underground Service Alert (USA) to have underground utility lines marked in the site vicinity at least 48 hours prior to drilling.

TASK 3 - OBTAIN NECESSARY PERMITS

ASE will obtain a drilling permit from the Alameda County Public Works Agency and an excavation permit from the City of Oakland to drill in the public right-of-way.

TASK 4 - DRILL TWO SOIL BORINGS AT THE SITE AND COLLECT SOIL AND GROUNDWATER SAMPLES FROM THE BORINGS

ASE will drill two soil borings using a Geoprobe or similar type drill rig. The drilling will be directed by a qualified ASE geologist. Undisturbed soil samples will be collected at least every 5-feet, at lithographic changes, and from just above the water table for subsurface hydrogeologic description and possible chemical analysis. The samples will be described by the ASE geologist according to the Unified Soil Classification System. The samples will be collected in brass or acetate tubes using a drive sampler advanced as the boring progresses. Each sample will be immediately removed from the sampler, trimmed, sealed with Teflon tape and plastic caps, secured with duct tape, and labeled with the site location, sample designation, date and time the sample was collected, and the initials of the person collecting the sample. The samples will then be

placed into an ice chest containing wet ice for delivery under chain of custody to a CAL-EPA certified analytical laboratory.

Soil from the remaining tubes not sealed for analysis will be removed for hydrogeologic description and will be screened for volatile compounds with an organic vapor meter (OVM). The soil will be screened by emptying soil from one of the tubes into a plastic bag. The bag will be sealed and placed in the sun for approximately 10 minutes. After the hydrocarbons have been allowed to volatilize, the OVM will measure the vapor through a small hole punched in the bag. These OVM readings will be used as a screening tool only since these procedures are not as rigorous as those used in an analytical laboratory.

A groundwater sample will be collected from each boring. Drilling will be halted at the water table and a Powerpunch or similar type device will be utilized to collect groundwater samples from the borings. The groundwater samples to be analyzed for TPH-G, BTEX and MTBE will be contained in 40-ml volatile organic analysis (VOA) vials, pre-preserved with hydrochloric acid, and sealed without headspace. The samples collected for TPH-D and TPH-MO analysis will be contained in 1-liter amber glass containers. All of the samples will be labeled with the site location, sample designation, date and time the samples were collected, and the initials of the person collecting the samples, and cooled in an ice chest with wet ice for transport to a state-certified analytical laboratory under chain-of-custody.

All sampling equipment will be cleaned in buckets with brushes and a TSP or Alconox solution, then rinsed twice with tap water. Rinsates will be contained on-site in 55-gallon steel drums until off-site disposal can be arranged.

TASK 5 - ANALYZE ONE SOIL AND ONE GROUNDWATER SAMPLE FROM EACH BORING

One soil and one groundwater sample collected from each boring will be analyzed by a CAL-EPA certified analytical laboratory for TPH-G by modified EPA Method 5030/8015, TPH-D and TPH-MO by modified EPA Method 3550/8015, and BTEX and MTBE by EPA Method 8020. The groundwater samples will also be analyzed for dissolved cadmium by EPA Method 6010.

The soil sample chosen for analysis will be the sample that appeared to be the most contaminated based on odors, staining and OVM readings. If

there is no evidence of contamination in the samples, the sample collected from the capillary zone will be selected for analysis.

TASK 6 - PREPARE A SUBSURFACE ASSESSMENT REPORT

ASE will prepare a report outlining the methods and findings of this assessment. The report will be submitted under the seal of state registered civil engineer or geologist. This report will include a summary of all work completed during this assessment including tabulated soil and groundwater analytical results, conclusions and recommendations. Copies of the analytical report and chain of custody will be included as appendices.

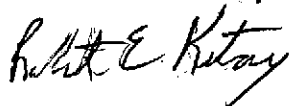
SCHEDULE

ASE plans to begin field activities at this site immediately upon approval of this workplan by the ACHCSA. Drilling is tentatively scheduled for July 31, 2000. The site monitoring wells will be destroyed under permit from the ACPWA once case closure is approved.

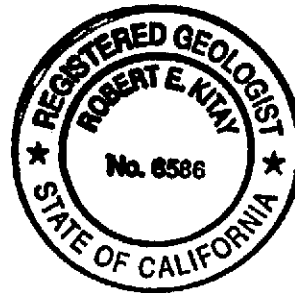
Should you have any questions or comments, please call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.



Robert E. Kitay, R.G., R.E.A.
Senior Geologist



cc: Mr. Mo Mashhoon, Mash Petroleum, 1721 Jefferson Street, Oakland, CA 94612

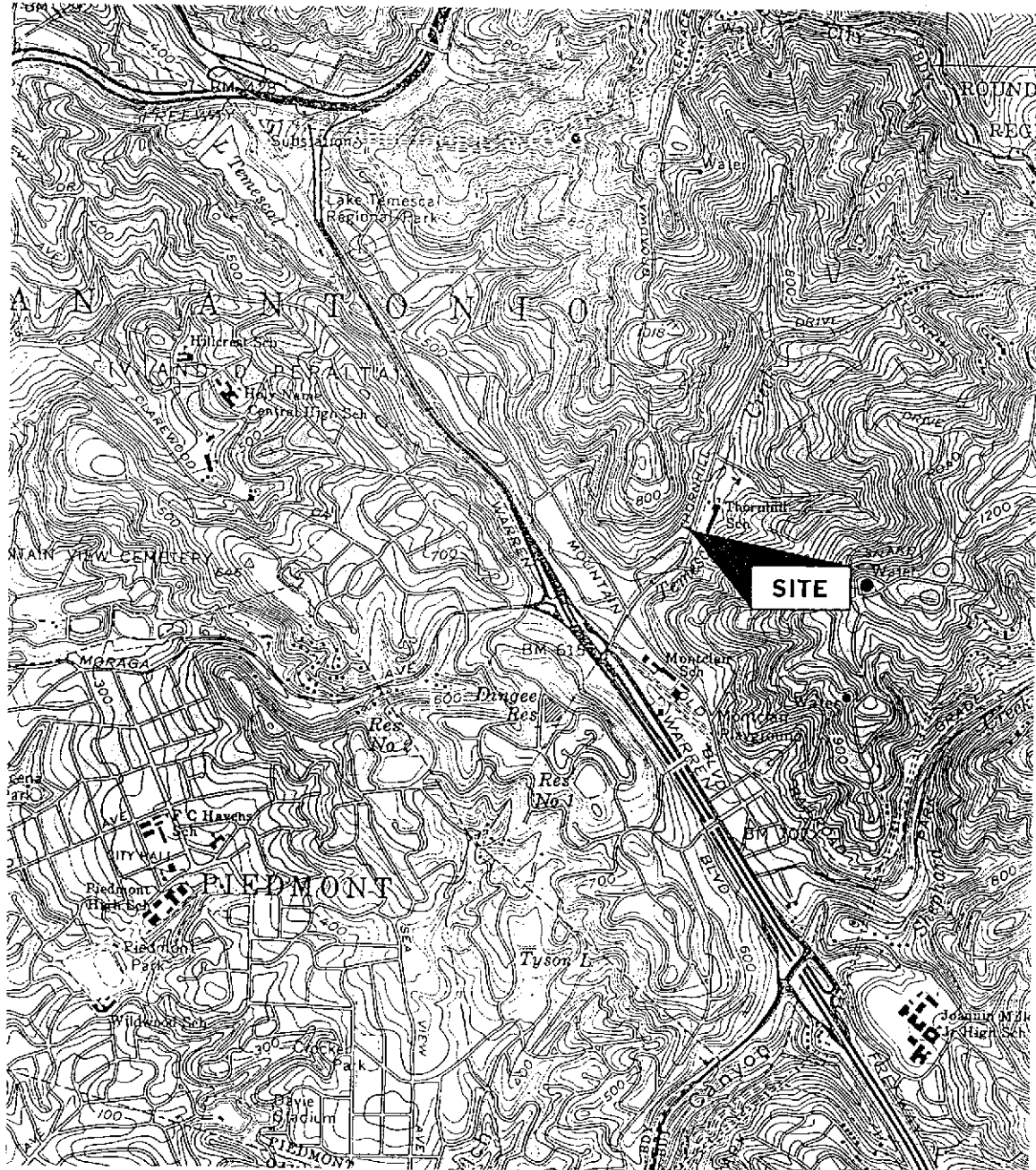
Mr. Don Hwang, Alameda County Health Care Services Agency, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502

Mr. Hernan Gomez, City of Oakland Fire Department, Office of Emergency Services Division, 505 14th Street, 7th Floor, Oakland, CA 94612

Mr. Chuck Headlee, California Regional Water Quality Control Board, San Francisco Bay Region, 1515 Clay Street, Suite 1400, Oakland, CA 94612



NORTH

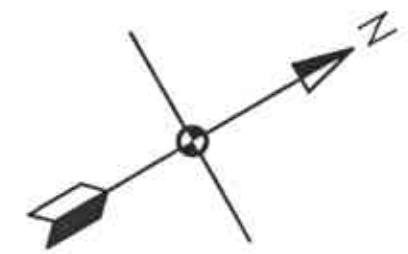


SITE LOCATION MAP

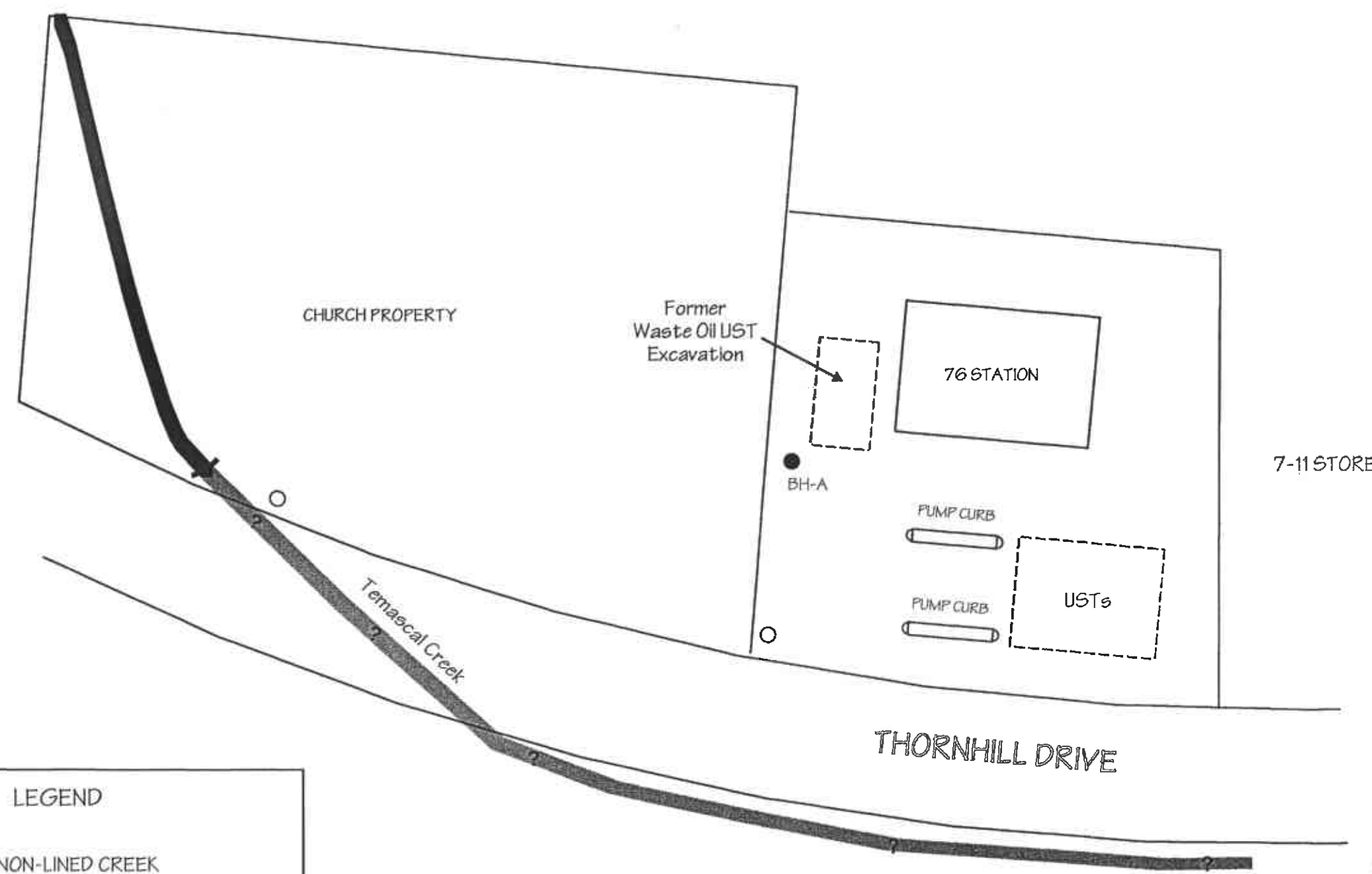
Mash Petroleum
5725 Thornhill Street
Oakland, California

AQUA SCIENCE ENGINEERS, INC.





Figure 1



SCALE
1" = 30'



LEGEND

-  NON-LINED CREEK
-  APPROXIMATE LOCATION OF UNDERGROUND CONCRETE-LINED CREEK
-  BH-A SOIL BORING LOCATION
-  PROPOSED BORING LOCATION

PROPOSED BORING LOCATION MAP

MASH PETROLEUM
5725 THORNHILL DRIVE
OAKLAND, CA

AQUA SCIENCE ENGINEERS | FIGURE 2

APPENDIX A

June 23, 2000 Letter From the ACHCSA

ALAMEDA COUNTY
HEALTH CARE SERVICES



AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

June 23, 2000

Mo Mashhoon
Mash Petroleum, Inc.
5725 Thornhill Dr.
Oakland, CA 94611

Re: 5725 Thornhill Dr., Oakland, CA 94611
Stid 1145

Dear Mr. Mashhoon:

On May 19, 2000, Larry Seto and Eva Chu from our office and I met your consultant, Robert Kitay, Aqua Science Engineers, at the site. We determined that two more borings would be required, at the southwest corner of the property and on the sidewalk south of the property to assess the nature and vertical and lateral extent of the release from the waste oil tank. Additionally, as requested in my letter dated April 27, 1999, the destruction of the wells, MW-1, MW-2, and MW-3, in the underground tank trenches, is required to prevent surface contamination from reaching the subsurface.

A workplan addressing these issues is required. If you have any questions, please call me at (510) 567-6746.

Sincerely,

Don Hwang
Hazardous Materials Specialist

C: ✓ Robert Kitay, Aqua Science Engineers, Inc., 208 W. El Pintado Rd., Danville, CA 94526
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