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November 11, 1999

WORKPLAN
for a
SOIL AND GROUNDWATER ASSESSMENT
at
Oakland Truck Stop
8255 San Leandro Street
Oakland, California

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

1.0 INTRODUCTION

This submittal outlines Aqua Science Engineers, Inc. (ASE)'s workplan for a soil and groundwater assessment at the Oakland Truck Stop located at 8255 San Leandro Street in Oakland, California (Figure 1). The proposed site assessment activities were initiated by Mr. Nissan Saidian, owner of the property, to meet the requirements of the Alameda County Health Care Services Agency (ACHCSA) outlined in their letter dated October 4, 1999 (Appendix A).

2.0 PROPOSED SCOPE OF WORK (SOW)

Based on the requirements of the ACHCSA outlined in their letter dated October 4, 1999, ASE's proposed SOW is as follows:

- 1) Prepare a workplan and health and safety plan for the site.
- 2) Obtain a drilling permit from the Alameda County Public Works Agency (ACPWA).
- 3) Drill two (2) soil borings at the site.
- 4) Analyze one soil sample collected from each soil boring at a CAL-EPA certified environmental laboratory for total petroleum hydrocarbons as gasoline (TPH-G) by modified EPA Method 5030/8015M, total petroleum hydrocarbons as diesel (TPH-D) and motor oil (TPH-MO) by modified EPA Method 3510/8015M, benzene, toluene, ethylbenzene and total xylenes (collectively known as BTEX) by EPA Method 8020 and methyl tertiary butyl ether (MTBE) by EPA Method 8020.
- 5) Install 2-inch diameter groundwater monitoring wells in each boring described in task 3.
- 6) Develop each new monitoring well using surge block agitation and pump and/or bailer evacuation.
- 7) Collect groundwater samples from each of the six site monitoring well for analyses.
- 8) Analyze the groundwater samples at a CAL-EPA certified analytical laboratory for TPH-G, TPH-D, TPH-MO, BTEX and MTBE. In addition, the groundwater sample collected from monitoring well MW-4 will

also be analyzed for dissolved lead by EPA Method 6010, and MTBE will be confirmed in the groundwater sample collected from monitoring well MW-3 by EPA Method 8260.

- 9) Survey the top of casing elevation of each well relative to the existing site wells, and determine the groundwater flow direction and gradient beneath the site.
- 10) Prepare a report detailing the methods and findings of this assessment.

Details of the assessment are presented below.

TASK 1 - PREPARE A WORKPLAN AND HEALTH AND SAFETY PLAN

Based on the site history and the analytical results of the soil and groundwater samples collected during the previous assessment at the site, ASE has prepared this workplan as well as 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 present at the site at all times.

TASK 2 - OBTAIN NECESSARY PERMITS

ASE will obtain a drilling permit from the Alameda County Public Works Agency (ACPWA). ASE will also notify Underground Service Alert (USA) to have underground utility lines marked in the site vicinity.

TASK 3 - DRILL TWO SOIL BORINGS AT THE SITE

ASE will drill two soil borings at the site in the locations shown on Figure 3. The borings will be drilled using a drill rig equipped with 8-inch diameter hollow-stem augers. 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 tubes using a split-barrel drive sampler advanced ahead of the auger tip by successive blows from a 140-lb. hammer dropped 30-inches. Each sample will be immediately removed from the sampler, trimmed, sealed with Teflon tape and plastic caps, secured with duct tape, 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 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.

All sampling equipment will be cleaned in buckets with brushes and a trisodium phosphate (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 4 - ANALYZE AT LEAST ONE SOIL SAMPLE FROM EACH BORING

At least one soil sample from each boring will be analyzed at a CAL-EPA certified environmental laboratory for TPH-G by modified EPA Method 5030/8015M, TPH-D and TPH-MO by modified EPA Method 3510/8015M, and BTEX and MTBE by EPA Method 8020. The soil sample to be analyzed will be the sample which appears to be the most contaminated based on odors, staining and/or OVM readings. If there is no indication of contamination in any of the samples, the sample collected from just above the water table (the capillary zone) will be selected for analysis.

TASK 5 - COMPLETE THE BORINGS AS MONITORING WELLS

ASE will complete the borings described in task 3 as 2-inch diameter groundwater monitoring wells. The wells will be constructed with 2-inch diameter, flush-threaded, schedule 40, 0.020-inch slotted PVC well screen and blank casing. The well casing will be lowered through the augers and #3 Monterey sand will be placed in the annular space between the well casing and the borehole to approximately 1-foot above the screened interval. Approximately 0.5-foot of bentonite pellets will be placed on top of the sand pack and hydrated with deionized water. This bentonite layer will prevent the cement sanitary seal from infiltrating into the sand pack. Cement mixed with 3 to 5 percent bentonite powder by volume will be used to fill the annular space between the bentonite layer and the surface

to prevent surface water from infiltrating into the well. The well head will be protected by a locking well plug and an at-grade, traffic-rated well box (See Figure 3 - Typical Monitoring Well).

The well will be screened to monitor the first water-bearing zone encountered. Based on information presented in the July 16, 1999 report prepared by Penn Environmental, ASE anticipates that the wells will be screened between 4-feet below ground surface and 14-feet bgs.

TASK 6 - DEVELOP THE MONITORING WELLS

The two new monitoring wells will be developed after waiting at least 72 hours after well construction. The wells will be developed using at least two episodes of surge block agitation and bailer and/or pump evacuation. At least ten well casing volumes of water will be removed during the development, and development will continue until the water appears to be reasonably clear. The well development purge water will be stored temporarily on-site in sealed and labeled 55-gallon steel drums until off-site disposal can be arranged.

TASK 7 - SAMPLE THE MONITORING WELLS

After waiting 72 hours after the well development, ASE will collect groundwater samples from all six groundwater monitoring wells. Prior to purging and sampling, the groundwater surface in each well will be checked for sheen or free-floating hydrocarbons. The thickness of any free-floating hydrocarbons will be measured with an oil/water interface probe and an acrylic bailer lowered slowly to the groundwater surface and filled approximately half full for direct observation. ASE will also measure the depth to groundwater in all site wells prior to purging water from any well. Prior to sampling, each well will be purged of at least four well casing volumes of groundwater. The temperature, pH and electrical conductivity of evacuated water will be monitored during the well purging, and purging will continue beyond four well casing volumes if these parameters have not stabilized. Groundwater samples will be collected from each well using disposable polyethylene bailers. Groundwater samples to be analyzed for volatile compounds will be decanted from the bailers into 40-ml glass volatile organic analysis (VOA) vials, preserved with hydrochloric acid, and sealed without headspace. The samples to be analyzed for non-volatile compounds will be contained in 1-liter amber glass bottles. 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. The

samples will be placed into an ice chest with ice for transport to the analytical laboratory under chain of custody. Purged groundwater will be stored temporarily on-site in sealed and labeled 55-gallon steel drums until off-site disposal can be arranged.

TASK 8 - ANALYZE THE GROUNDWATER SAMPLES

The groundwater samples will be analyzed by a CAL-EPA certified analytical laboratory for TPH-G by modified EPA Method 5030/8015M, TPH-D and TPH-MO by modified EPA Method 3510/8015M, and BTEX and MTBE by EPA Method 8020. In addition, the groundwater sample collected from monitoring well MW-4 will also be analyzed for dissolved lead by EPA Method 6010, and MTBE will be confirmed in the groundwater sample collected from monitoring well MW-3 by EPA Method 8260.

TASK 9 - SURVEY THE TOP OF CASING ELEVATION OF EACH WELL

ASE will survey the top of casing elevation of each well relative to a site datum. These elevations will be used with the depth to groundwater measurements to determine the groundwater flow direction and gradient beneath the site.

TASK 10 - PREPARE A SUBSURFACE ASSESSMENT REPORT

ASE will prepare a subsurface assessment report outlining the methods and findings of this assessment. This report will include a summary of the results, the site background and history, description of the well construction, development and sampling, tabulated soil and groundwater analytical results, conclusions and recommendations. Formal boring logs, analytical reports, and chain of custody documents will be included as appendices. This report will be submitted under the seal of a California registered civil engineer or geologist.

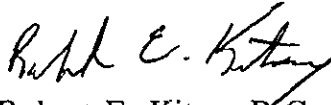
3.0 SCHEDULE

ASE plans to begin field activities immediately upon approval of this workplan by the ACHCSA.

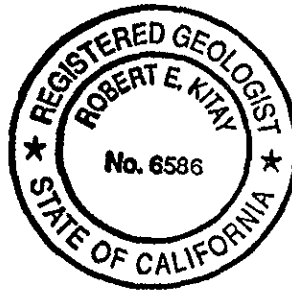
Should you have any questions or comments, please call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.



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

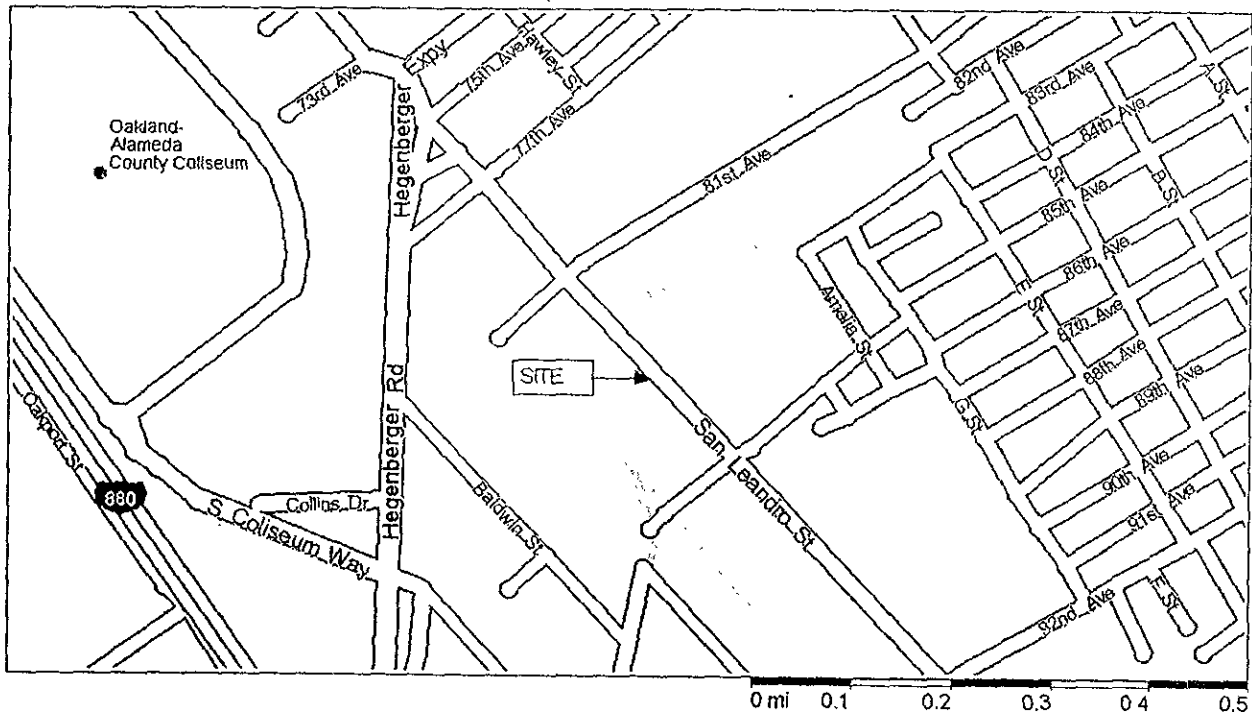


cc: Mr. Nissan Saidian
Mr. Barney Chan, ACHCSA
Mr. Chuck Headlee, RWQCB

FIGURES



NORTH



LOCATION MAP

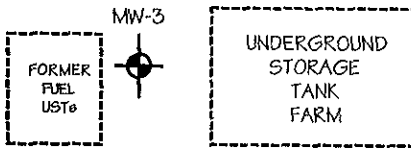
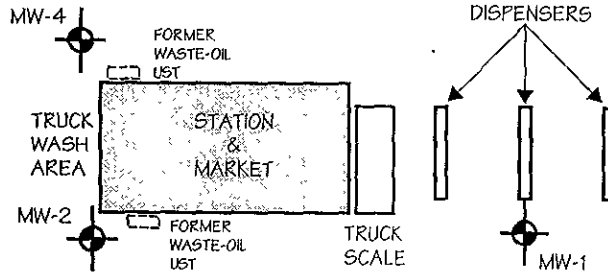
OAKLAND TRUCK STOP
8255 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC.

Figure 1

PROPERTY BOUNDARIES

CAFE



SAN LEANDRO STREET

LEGEND



Existing Monitoring Well



Proposed Monitoring Well



NORTH

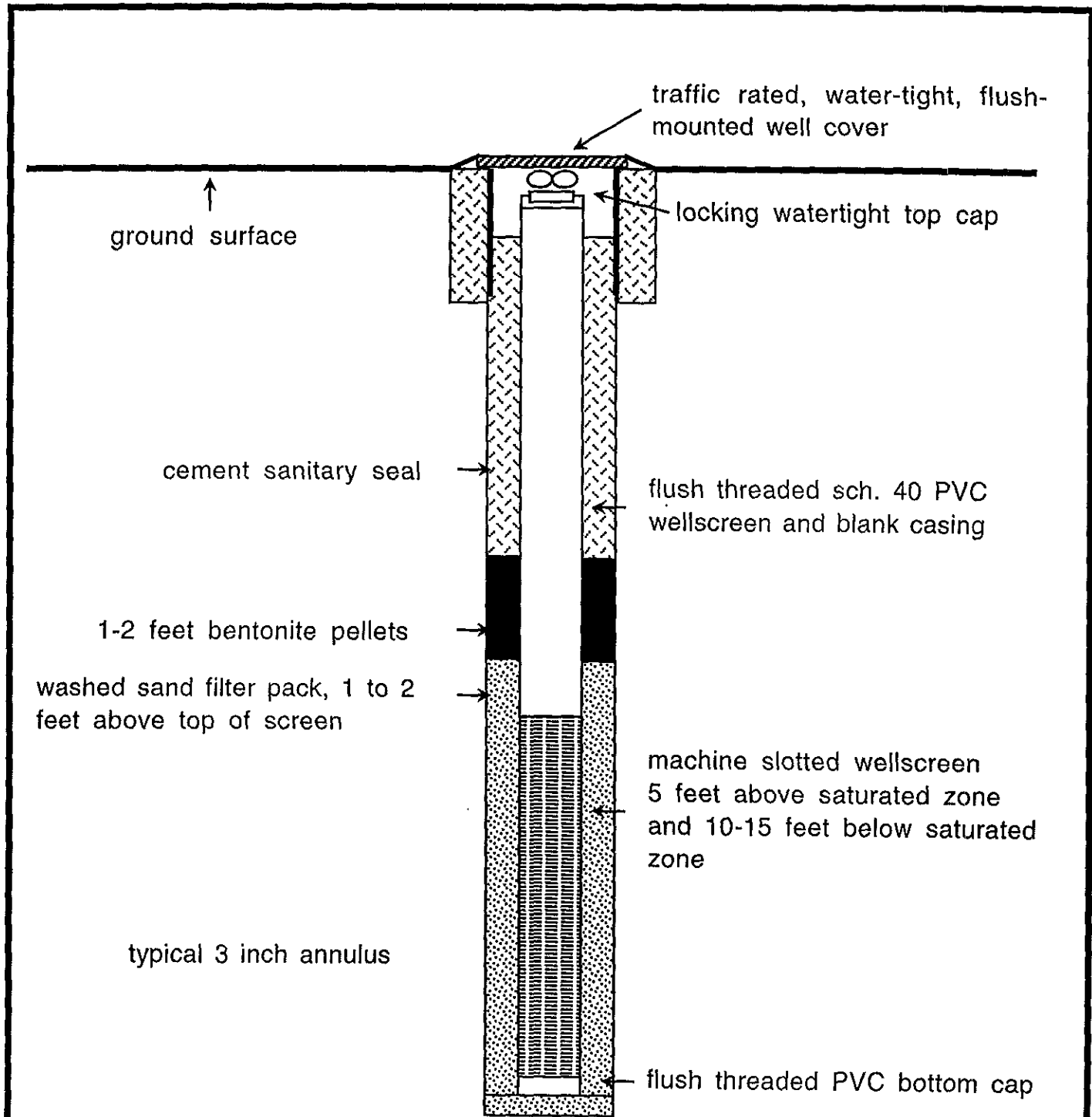
SCALE
1" = 50'

PROPOSED MONITORING WELL LOCATION MAP

OAKLAND TRUCK STOP
8255 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC.

Figure 2



TYPICAL
MONITORING WELL CONSTRUCTION
IN CROSS SECTION

Aqua Science Engineers	Figure 3
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APPENDIX A

Alameda County Health Care Services Agency Letter

ALAMEDA COUNTY
HEALTH CARE SERVICES



AGENCY

DAVID J. KEARS, Agency Director

October 4, 1999
StID # 559

Mr. Nissan Saidian
5733 Medallion Court
Castro Valley, CA 94522

ENVIRONMENTAL HEALTH SERVICES

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

Re: Oakland Truck Stop, 8255 San Leandro St., Oakland CA 94621

Dear Mr. Saidian:

Our office has received and reviewed the September 22, 1999 Quarterly Groundwater Monitoring Report for the above site as prepared by Aqua Science Engineers Inc. (ASE). As you are aware, groundwater sampling and analysis was performed on wells MW-2, MW-3 and MW-4. Free product, encountered in MW-1, was bailed on several occasions in an attempt to remove the product. Based upon the sampling results and those of the prior soil and groundwater investigation, ASE has made a number of recommendations. Our office has the following comments to the ASE recommendations:

- ASE recommends the removal of free product from MW-1 every two weeks until no further free product is observed for a one-month period. This is acceptable. You should be aware that the initial free product removals were approved by our office prior to being done.
- Additional subsurface investigation is recommended in the area south of boring B-8. Our office agrees with this in addition to requesting additional investigation north of MW-1 and the dispensers. It appears that two additional monitoring wells would be required.
- ASE recommends and our office approves running only lead in the water sample from MW-4.
- ASE recommends running BTEX and MTBE by EPA Method 8020 as a cost savings measure. Prior to doing this, you must confirm the presence of MTBE in that well exhibiting the highest concentration via EPA Method 8020 ⁸²⁶⁰ ie MW-3.
- ASE recommends and our office concurs continuing quarterly monitoring at this site.

Please provide a work plan for this additional investigation along with your next groundwater monitoring report.

You may contact me at (510) 567-6765 if you have any questions.

Sincerely,

Barney M. Chan
Hazardous Materials Specialist

C: B. Chan, files
Mr. R. Kitay, ASE, 208 W. El Pintado, Danville, CA 94526
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