

DAVID C. GLICK ASSOCIATES

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Engineering Geology Consultants
Environmental Management Consultants
Technical Information Service

91 JUL 15 PM 2:10

July 9, 1991

KTW & ASSOCIATES
43289 Osgood Road
Fremont, CA 94539

Subject: Hooshi's Auto, 1499 Mac Arthur Boulevard, Oakland, CA

Reference: (a) Work Plan for Monitoring Well Installation at Hooshi's Auto,
dated June 10, 1991

Dear Mr. Krause:

During a telephone conversation with Mr. Paul Smith yesterday afternoon, Mr. Smith raised a concern about the scope of work as presented in reference (a) which indicated that three borings would be drilled at the subject site but only two of the borings would be completed as monitoring wells. We regret to say that this was a typographical error in the Work Plan. The Health & Safety Plan and amended scope of work requested by Mr. Smith (inclusion of quarterly monitoring of the proposed wells for a minimum of one year) was submitted to Mr. Fernando Alvarez with Tracy Federal Bank (by FAX) on July 6, 1991. The amended scope of work indicated on page 1 of reference (a) should read:

PROPOSED SCOPE OF WORK

The proposed scope of work includes advancing three exploratory borings and installation of three ground water monitoring wells as outlined below:

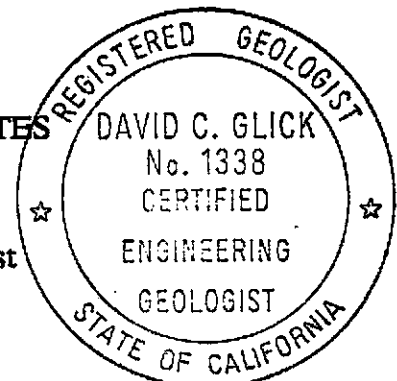
- (1) advance three subsurface exploration borings within the immediate vicinity of the existing underground storage tanks to obtain soil samples for analytical testing;
- (2) complete the three exploratory borings as ground water monitoring wells to further define the ground water conditions at the site and to facilitate collection of ground water samples for analytical testing;
- (3) perform analytical testing on the soil and ground water samples;
- (4) prepare a report documenting the findings of the investigation; and
- (5) quarterly monitoring of the wells for a minimum of one year.

We apologize for the typographical error and any confusion it may have caused. We trust this information is sufficient for Alameda County to proceed with review and approval of the Work Plan such that work may proceed in a timely fashion.

Respectfully submitted,

DAVID C. GLICK ASSOCIATES

David C. Glick
David C. Glick, CEG 1338
Principal Engineering Geologist



Copy to: Paul Smith, Alameda County

DAVID C. GLICK ASSOCIATES

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Engineering Geology Consultants
Environmental Management Consultants
Technical Information Service

91 JUN 14 11:02

June 10, 1991

KTW & ASSOCIATES
43289 Osgood Road
Fremont, CA 94539
Attn: Mr. Wayne Gathright

Subject: Work Plan for Monitoring Well Installation at Hooshi's Auto
1499 Mac Arthur Boulevard, Oakland, CA

Dear Mr. Gathright:

In accordance with your request, David C. Glick Associates is pleased to submit this Work Plan for advancing three exploratory borings and the installation of three ground water monitoring wells at the subject site located at 1499 Mac Arthur Blvd. in the City of Oakland, in Alameda County, California. The site is currently occupied by Hooshi's Auto.

Three underground gasoline storage tanks were removed from the site by KTW & Associates on October 3, 1990. Five soil samples were collected from the tank excavation and one additional sample was collected from below the pipelines. Analytical testing of the soil sampled detected variable concentrations of hydrocarbon constituents ranging from non-detectable to 450 parts per million (ppm) of Total Petroleum Hydrocarbons as gasoline and Benzene concentrations ranged from non-detectable to 8.7 ppm.

PROPOSED SCOPE OF WORK

The proposed scope of work includes advancing three exploratory borings and installation of two ground water monitoring wells as outlined below:

- (1) advance three subsurface exploration borings within the immediate vicinity of the existing underground storage tanks to obtain soil samples for analytical testing;
- (2) complete two of the three exploratory borings as ground water monitoring wells to further define the ground water conditions at the site and to facilitate collection of ground water samples for analytical testing;
- (3) perform analytical testing on the soil and ground water samples; and
- (4) prepare a report documenting the findings of the investigation.

Specifics of the individual investigative phases are described in the following sections of this Work Plan.

Subsurface Exploration

Three subsurface exploration borings would be advanced in the immediate vicinity of the former underground storage tanks to characterize the underlying soils and to obtain soil samples for analytical testing. The exploratory borings would be completed as ground water monitoring wells and Monitoring Well Permits would be obtained from the Alameda County Flood Control District (Zone 7) prior to drilling the exploratory borings. The locations of the proposed Monitoring Wells have been selected to place one of the wells in a suspected "down-gradient direction" from the former tank locations.

The borings would be drilled by Exploration Geoservices, State of California Licensed Drilling Contractor, C57 License No. 489288. The borings would be logged under the supervision of a State of California Certified Engineering Geologist. The drill cuttings and soil samples obtained from the borings would be monitored during drilling to observe moisture changes in the soils and to determine the depth of the first saturated zone. It is intended that the borings would be advanced a minimum of 10 feet into the saturated zone unless a low permeable material is encountered prior to achieving this depth. Should a low permeable zone be encountered prior to achieving the 10 foot depth, the screened interval of the well would be reduced such that the low permeable zone is not penetrated to protect underlying aquifers.

The soil borings would be advanced using an eight inch, nominal diameter, continuous flight hollow stem auger. Drilling and sampling equipment used for advancing the exploratory borings and subsequent ground water monitoring wells would be thoroughly steam cleaned before drilling begins and between each boring to prevent the introduction of off-site contamination and cross contamination between borings. Sampling equipment would be cleaned between sample events by steam cleaning or using a phosphate-free detergent bath and double rinsed in hot water baths to prevent cross contamination. Pre-cleaned stainless steel or brass liners would be placed in the sampler to retain the soil. The drilling and sampling equipment would be steam cleaned subsequent to completion of the field activities. Soil cuttings and rinse waters derived from the borings/cleaning would be retained in 55-gallon containers and stored on-site during the drilling pending results of the analytical testing. The disposal of the cuttings and rinse remains the responsibility of the Client.

Soil samples would be obtained at five (5) foot intervals throughout the borings, at changes in lithology, and where obvious soil contamination exists through the use of a 2 inch I.D. split-barrel sampler advanced into the undisturbed soil by a 140 pound hammer repeatedly falling 30 inches. Sand catchers would be used as necessary to retain the samples. A split-barrel, standard penetration sampler would be used should the 2 inch sampler prove ineffective at obtaining the samples. The drill cuttings and soil samples would be monitored in the field for evidence of hydrocarbon content through the use of a portable photo-ionization detector (PID), organic vapor meter (OVM), or similar device. The soil samples would be immediately sealed in the liners using aluminum foil and plastic caps and properly labeled including: the date, time, sample location, and project number. The samples would be placed on ice immediately for transport to the laboratory under chain-of-custody documentation.

& all samples are to be sampled.

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Ground Water Monitoring Wells

Following completion of the borings, the three open standpipe piezometer monitoring wells would be installed to assess the impact, if any, resulting from the existing underground storage tanks. The monitoring wells would be constructed by installing 2-inch diameter polyvinyl chloride (PVC) flush-threaded casing and slotted pipe directly through the hollow stem auger. The slotted section of the PVC pipe installed through the saturated zone would have 0.020 inch factory perforations. The slotted pipe would extend a minimum of two feet above the current ground water level to monitor fluctuations in the ground water level.

Materials used in the well construction would be thoroughly cleaned prior to introduction into the boring. The monitoring wells would be filter-packed with clean monterey silica sand throughout the screened interval. The filter material would be determined based on lithology encountered during drilling and would likely consist of No. 3 Monterey Sand or No. 2/12 Lonestar Sand. The filter-pack material would be installed in the annular spacing between the monitoring well pipe and the auger as the auger is removed and would extend a minimum of two feet above the top of the screened interval. To assure continuity and integrity of the filter material, and to prevent the bore hole from caving, no more than five foot of auger would be removed at a time.

A one foot thick layer of bentonite pellets would be placed above the filter material to provide an annular seal and the remainder of the boring would be filled with a cement slurry to within one foot of grade. Should ground water exist in the boring/well in excess of two feet above the bentonite seal, the cement slurry would be placed using the tremmie-method. The well casings would have a locking cap and will be enclosed inside a watertight cast iron or aluminum traffic box installed in concrete flush with the surface.

Well Development and Sampling

The monitoring wells would be allowed to stabilize for a minimum of 72 hours following construction prior to development activities. The initial well development would be through the use of a 1.7 inch Brainard-Kilman mechanical lift hand pump, an air-lift or nitrogen-lift pump, or a positive displacement bladder pump dependent on the depth to ground water and the screened interval. The wells would be developed until a minimum of four well volumes have been purged and the discharged water appears clear of sediment. Electrical conductivity, temperature, and pH of the ground water would be recorded throughout the development process. The well development would continue until the electrical conductivity, temperature, and pH of the discharged water have stabilized. Depth to water measurements would be recorded prior to and following the well development activities.

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The wells would be allowed to recover for a minimum of 48 hours between development and sampling activities. Free product measurements would be obtained utilizing a product/ground water interface probe or through the use of an acrylic or teflon bailer lowered into the well to obtain a surface water sample. The teflon bailer would be used to collect a surface water sample to observe the presence of hydrocarbon odors, visible sheen, or free product. Depth to water measurements would be also be recorded at this time using an electronic water level probe.

Prior to sampling, a minimum of four well volumes would be purged from the well through the use of a positive displacement bladder pump or teflon bailer. Electrical conductivity, temperature, and pH of the ground water would be recorded throughout the purging process. The purging activities would continue until the electrical conductivity, temperature, and pH of the discharged water have stabilized. Water samples for analytical testing would be obtained through the use of the bladder pump or teflon bailer.

The water developed from the monitoring wells would be contained on-site pending receipt of the laboratory test results. Storage and disposal of the contained water remains the responsibility of the Client.

The water samples would be collected in sterilized glass vials with Teflon lined screw caps. The samples would be immediately sealed in the vials and properly labeled including: the date, time, sample location, project number, and indication of any preservatives added to the sample. The samples would be placed on ice immediately for transport to the laboratory under chain-of-custody documentation. Travel blanks or duplicate field blanks are not anticipated to be carried or collected.

Ground Water Depth and Gradient Measurements

The location and elevation of each Monitoring Well would be surveyed following completion of the well construction. Water levels in the three wells would be measured using an electronic water level probe. The depth to water measurements would be consistently recorded from a scribed location on the top of the well casing. The depth to water measurements would be used to determine the direction of ground water flow and ground water gradient beneath the project site.

Free Product Measurements

Free product measurements would be obtained for each Monitoring Well at the time of each sample acquisition utilizing a product/ground water interface probe or through the use of an acrylic or teflon bailer lowered into the well to obtain a surface water sample. The teflon bailer would be used to collect a surface water sample to observe the presence of hydrocarbon odors, visible sheen, or free product.

ANALYTICAL TESTING

Soil and ground water samples would be submitted to and tested by a State of California, Department of Health Services certified testing laboratory. Analytical testing would be scheduled and performed in accordance with the State of California, Regional Water Quality Control Board Guidelines. Soil samples would be tested for Total Petroleum Hydrocarbons as gasoline by RWQCB Method GCFID (5030/8015) and Volatile Aromatics by EPA Method 8020. Ground water samples would be tested for Total Petroleum Hydrocarbons as gasoline by RWQCB Method GCFID (5030/8015) and Volatile Aromatics by EPA Method 602.

The anticipated analytical detection/reporting limits are as follows: Total Petroleum Hydrocarbon as gasoline by RWQCB Method GCFID (5030), 1.0 ppm (soil) and 50 ppb (water) and Volatile Aromatics (BTXE), 0.005 ppm (soil) and 0.5 ppb (water); however, the actual reporting limits would be dependent on the concentration of product contained in soil/water samples.

REPORT

A report documenting the findings and observations of the investigation including: the findings and data logs for the subsurface investigation; well logs and well development records; analytical test data; chain-of-custody records; and other pertinent information obtained throughout the investigative process.

SCHEDULE

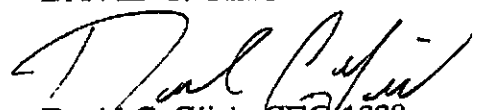
It is anticipated that upon approval of this work plan by the Alameda County Department of Health Services, the work described herein would be initiated within one week of receipt of authorization to proceed and receipt of the Zone 7 well permits.

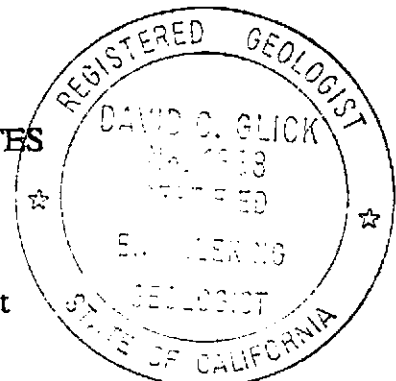
Standard analytical testing turnaround time of two (2) weeks is anticipated to be used unless directed otherwise. The final report would be submitted within two weeks following receipt of the analytical test data for the ground water samples.

Questions or comments regarding the attached work plan should be addressed to the undersigned.

Respectfully submitted,

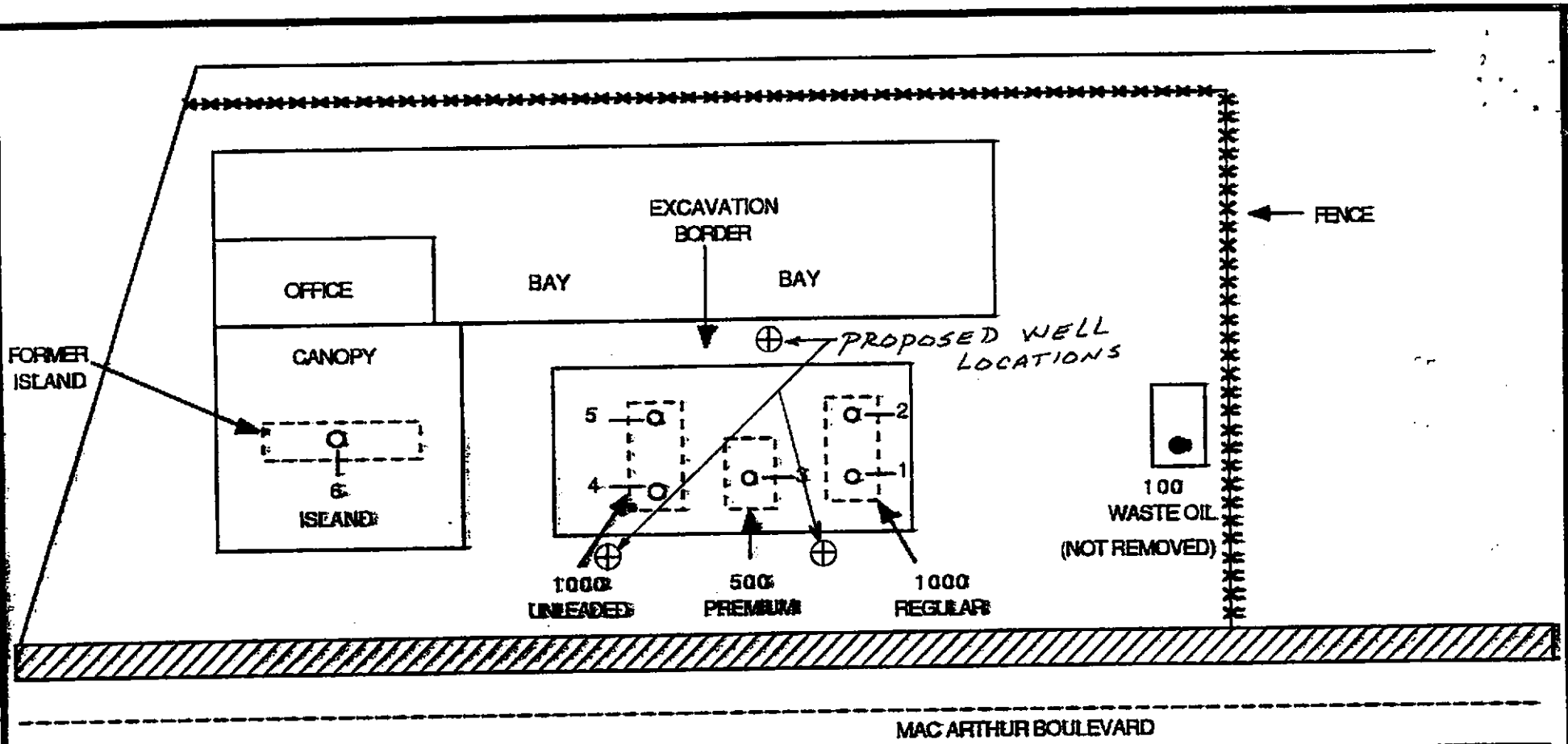
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David C. Glick, CEG 1338
Principal Engineering Geologist



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MAC ARTHUR BOULEVARD



SCALE NTS
DATE 10/18/90
DRAWN BY EMM



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 (415) 623-0480
 Cal. State Cont. Lic. #572427

SAMPLE LOCATION MAP

- 1 = TPIKA-N
- 2 = TPIKA-S
- 3 = TPO.5K-C
- 4 = TRIKB-N
- 5 = TPIKB-S
- 6 = TP-L-1

PROJECT NO.: 1099

HOOSHIS AUTO SERVICE
 1499 Mac Arthur Blvd.
 Oakland, California