

BERNABE AND BRINKER INC.

General Engineering Contractor • Hazardous Substances Removal • License #610617

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July 15, 1993

Mr. J. W. Silveira
499 Embarcadero
Oakland, CA 94606

Subject: Proposal for the Installation of an Extraction Well and Additional Monitoring Wells at 2301 East 12th Street, Oakland, California.

Dear Mr. Silveira:

This proposal was prepared as part of the workplan to further characterize and initiate groundwater remediation at the subject site. The proposed work is divided into a series of tasks as discussed below.

TASK 1 - SITE AREA MAP

Because of the need to investigate the extent of offsite contamination in the down-gradient direction of the site and assess the potential for up-gradient contamination, a detailed map of the site and surrounding area needs to be prepared. The most cost-effective way to produce this map is to enlarge an aerial photograph to scale and have it printed on reproducible mylar. The first task is therefore to arrange for the map and to plot existing data such as former tank locations, existing and proposed well locations, etc.

TASK 2 - INSTALLATION OF EXTRACTION WELL

At least one extraction well will be required to carry out the groundwater remediation at the site. The well will be located adjacent to the former waste oil tanks. The well will be constructed of 4 inch diameter PVC pipe and extend to a depth of approximately 30 feet to allow for anticipated drawdown of the groundwater.

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Soil samples will be collected for analysis at depth of approximately four feet and just above the groundwater level. Because the extraction well will be located adjacent to the former waste oil tanks the full suite of tests required for waste oil tanks will be run on the samples. The samples will be collected and transported to a State Certified Laboratory following standard QA/QC procedures and chain-of-custody control.

In later phase of the investigation and prior to initiation of the remediation, a pump test should be run on the extraction well to assess the shallow aquifer characteristics and effectiveness of the well in capturing the contamination plume. Based on the data from the pump test and the results of analysis of groundwater from the additional monitoring wells as discussed below, a determination will be made as to whether or not an additional extraction well or wells will be required.

TASK 3 - INSTALLATION OF ADDITIONAL MONITORING WELLS

Three additional monitoring wells are proposed to assess the extent of migration of the contamination plume. The monitoring wells will be constructed of 2 inch diameter PVC pipe and extend to a depth of 20 feet. The approximated locations of the wells are shown on the attached site plan. Two of the wells will be located offsite and on City of Oakland property (one in center of 23rd Ave., and the other on the north side of 23rd Ave.). These offsite wells will require additional permits for their installation. Because the wells are designed primarily to assess groundwater contamination, soil samples will be collected to log the borings but not retained for analysis.

TASK 4 - DEVELOPMENT AND SAMPLING OF WELLS

The new wells will be developed by pumping after a least 72 hours from the time of installation. The wells will be pumped until they are clear of sediment and after they stabilize will be purged and sampled. The extraction well water will be tested for the full suite of analysis required for waste oil tanks. The three monitoring wells will be tested for TPH as gasoline with BTEX and TPH as diesel. The relative elevations of the top of casings will be run to allow gradient calculations. The depth to water will be measured using an electronic probe calibrated to 0.01 foot. The samples will be transported to a State Certified Laboratory under chain-of-custody control.

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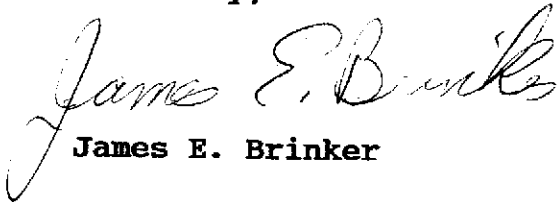
The 4 inches extraction well will be drilled to a depth of 30 feet, if additional drilling and material is required there will be an additional charge for labor and material needed to complete the job.

REPORT PREPARATION

A report will be prepared to document the installation of the wells and the results of the analysis. The report will provide recommendations for the proposed groundwater remediation at the site.

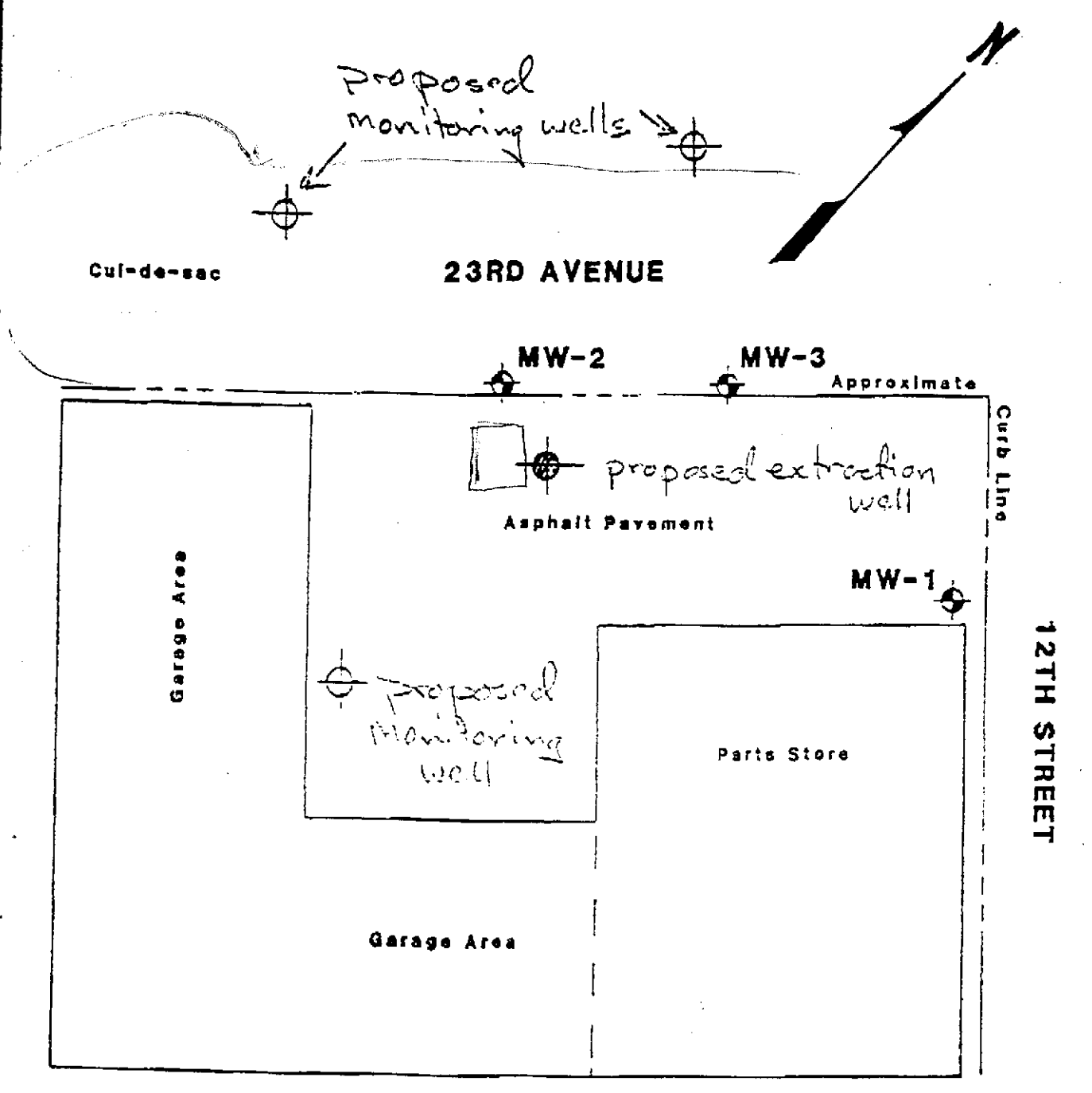
We are pleased to provide you with this proposal and if you have any questions or require additional information, please contact the undersigned.

Sincerely,

A handwritten signature in cursive script that reads "James E. Brinker". The signature is written in dark ink and is positioned above the printed name.

James E. Brinker

cc: Mr. Barney Chan



Map derived from
 Artesian Environmental Consultants,
 Mt. Valley, California
 July, 1992

Approximate Scale: 1 inch equals 20 Feet

PLATE	No.
SITE MAP	