

# P & D ENVIRONMENTAL

A Division of Paul H. King, Inc.  
4020 Panama Court  
Oakland, CA 94611  
(510) 658-6916

ENVIRONMENTAL  
PROTECTION

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March 9, 1999  
Work Plan 0201.W1

Mr. Amir Gholami  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

SUBJECT: GROUNDWATER MONITORING WELL INSTALLATION WORK PLAN  
Sekhon Gasoline Station  
6600 Foothill Blvd.  
Oakland, CA

Dear Mr. Gholami:

P&D Environmental, a division of Paul H. King, Inc. (P&D) is pleased to present this work plan for installation of three groundwater monitoring wells at the subject site. This work will be performed in accordance with a letter from Mr. Amir Gholami of the Alameda County Department of Environmental Health (ACDEH) dated January 11, 1999. A Site Plan showing the proposed well locations is attached as Figure 1.

All work will be performed under the direct supervision of an appropriately registered professional. This work plan is prepared in accordance with guidelines set forth in the document "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites" dated August 10, 1990 and "Appendix A - Workplan for Initial Subsurface Investigation" dated August 20, 1991.

## BACKGROUND

The site is presently used as a retail gasoline station. It is P&D's understanding that the site was formerly operated as a gasoline station by Beacon. P&D Environmental, a division of Paul H. King, Inc. (P&D) was retained by the property owner, Mr. Ravi Sekhon, to provide regulatory agency liaison services following the removal of one steel Underground Storage Tank (UST) from the subject site. P&D's initial understanding of site conditions was transmitted to the ACDEH in a letter dated January 11, 1999.

It is P&D's understanding that the site was purchased by Mr. Sekhon during the last half of 1998. The UST system consisted of two single wall fiberglass USTs and one single wall steel UST, two dispenser islands, and two dispensers on each dispenser island.

As part of the UST system upgrade effort, Mr. Sekhon arranged to have the steel UST removed. The two fiberglass USTs are to remain at the site as part of the UST system upgrade. New dispensers with dispenser pans and sensors, double walled piping, overflow and overspill protection, a sump with a sensor for each UST, and an Automatic Tank Gaging system were installed during the first two months of 1999.

On December 16, 1998 the steel UST and dispensers were removed. Mr. Steve Crawford of the Oakland Fire Department was on site to observe site conditions and to direct the collection of samples. Based on a telephone conversation with Mr. Crawford on January 11, 1999, Mr. Crawford stated that there was nothing remarkable about the site, and no evidence of contamination other than MTBE which was reported in the laboratory reports. He stated that soil samples were collected from the UST pit sidewalls at his direction, and from beneath the dispenser islands. He stated that because the pipe trench between the dispensers and UST pit was less than 20 feet, he did not require that pipe trench samples be collected. He also stated that there was no other useful information in his report, because it simply documented procedures.

STP 3985

NEED 3 RESPONSES  
3/11/99  
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During P&D's site visit on January 9, 1999 approximately 6 inches of groundwater was observed in the bottom of the UST pit. The measured depth to groundwater was 8.0 feet below the ground surface. Sheen was observed on the water in the UST pit. No petroleum hydrocarbon odors were detected in any of the soil at the site.

Copies of the soil sample results for samples collected from beneath the dispenser islands and from the UST pit sidewalls on December 16, 1999 were forwarded to the ACDEH on January 11, 1999. In addition, on December 31, 1998, one groundwater grab sample was collected by Edd Clark & Associates. A copy of these sample results were also forwarded to the ACDEH.

Review of the laboratory reports shows that the only detected compound in soil has been MTBE (with the exception of 25 ppb of toluene in the east dispenser island soil sample). Review of the groundwater sample from the pit shows that TPH-G, BTEX and MTBE were detected in the groundwater.

Based on the sample results, P&D recommended that the UST pit be backfilled, the upgrade of the remaining UST system be completed, and that a groundwater investigation be performed to determine the extent and origin of petroleum hydrocarbons in groundwater.

Subsequently, groundwater was pumped from the UST pit and stored in above ground storage tanks pending carbon filtration and discharge to the storm drain with an approved San Francisco Bay Regional Water Quality Control Board temporary groundwater discharge permit. In addition, the stockpiled soil generated during UST removal was characterized, profiled and removed from the site to the BFI Vasco Road landfill in Livermore, California.

#### SCOPE OF WORK

To perform the groundwater monitoring well installation, the following tasks will be performed.

- o Regulatory agency coordination.
- o Installation of three groundwater monitoring wells.
- o Development of the monitoring wells.
- o Surveying of the well heads vertically to the nearest 0.01 foot and horizontally.
- o Purging and sampling of the monitoring wells.
- o Arrange for soil and groundwater sample analysis for Total Petroleum Hydrocarbons as Gasoline (TPH-G), benzene, toluene, ethylbenzene and xylenes (BTEX), and MTBE.
- o Report preparation documenting installation, surveying, development and sampling of the monitoring wells.

Each of these is discussed below in detail.

#### Regulatory Agency Coordination

Following work plan approval, bids will be solicited, a project pre-approval request will be submitted to the State Water Resources Control Board (SWRCB) UST Fund, and the contract for performing the work will be awarded following receipt of SWRCB pre-approval. Prior to the beginning of field work, all necessary permits will be obtained, Underground Service Alert will be

notified for buried utility location, and a Health and Safety Plan will be prepared. The drilling date will be set for the earliest possible date available, and the ACDEH will be notified of the drilling date by telephone as soon as it has been set.

#### Installation of Three Groundwater Monitoring Wells

Three groundwater monitoring wells, designated as MW1, MW2 and MW3 will be installed at the proposed locations shown on Figure 2.

A ten-inch diameter borehole will be drilled using truck-mounted hollow stem augers for each of the monitoring wells. The hollow stem augers will be steam cleaned prior to use in the borehole. Soil samples will be collected from the borehole into brass tubes at a maximum of five foot intervals, at changes in lithology and at any areas of obvious contamination using a Modified California split-spoon sampler lined with brass tubes. Blow counts will be recorded every six inches. The soil samples will be logged in the field in accordance with standard geologic field techniques and the Unified Soil Classification System. The soil samples will be evaluated with a photoionization detector equipped with a 10.0 eV bulb and calibrated with a 100 ppm isobutylene standard.

In each borehole, the soil sample collected from above the water table at a depth of five feet will be retained in its brass tube for laboratory analytical purposes. The ends of the brass tube for this sample will be successively covered with aluminum foil and plastic endcaps. The brass tube will then be labeled, placed into a ziplock baggie, and stored in a cooler with ice pending delivery to a State-accredited hazardous waste testing laboratory. Chain of custody procedures will be observed for all sample handling.

The boreholes for the monitoring wells will be advanced to a total depth of approximately 15 feet below the ground surface. Groundwater was initially encountered in the tank pit at a depth of approximately 8 feet below the ground surface. It is P&D's understanding that the groundwater flow direction at the site is to the south-southeast.

The monitoring wells will be constructed using two-inch diameter Schedule 40 PVC pipe. The lowermost 10 feet of the casing will be 0.010-inch width factory slotted. A screw-on cap or slip-cap will be placed on the bottom of the well. The annular space surrounding the screen will be filled with a Lonestar 2/16 sack sand to a height of one foot above the top of the screen. A one-foot thick layer of bentonite pellets will be placed above the sand and hydrated. The remaining annular space will be filled with a neat cement grout (sanitary seal) to approximately one half foot below the ground surface.

The top of each well pipe will be secured with a locking expandable plug and enclosed in a water-tight, traffic-rated locking vault. The tops of the vaults will be set slightly above grade to inhibit vault water accumulation.

Soil generated during drilling will be stored on a sheet of visqueen and covered with visqueen pending appropriate disposal. Water generated during drilling will be stored in DOT-approved 55-gallon drums pending appropriate disposal.

#### Surveying of the Wellhead Elevations for the Monitoring Wells

Following installation of the proposed groundwater monitoring well, the top of the PVC well pipe for the monitoring well will be surveyed by a State-licensed surveyor vertically to the nearest 0.01 foot relative to a Mean Sea Level datum. The wells will also be surveyed horizontally. The surveyed location at the top of each well pipe will be marked to identify the surveyed location for use during future monitoring activities.

#### Development of the Monitoring Wells

At least 48 hours after the wells have been constructed, the wells will be developed by surging and overpumping. Prior to development, the wells will be monitored for depth to water and the presence of free product or sheen. The depth to water will be measured using an electric water level indicator and will be measured to the nearest 0.01 feet from a location marked at the top of the monitoring well. The presence of free product and sheen will be evaluated using a transparent bailer. Water removed from the wells during development activities will be stored in DOT-approved 55-gallon drums pending appropriate disposal.

#### Purging and Sampling of the Monitoring Wells

At least 24 hours after the wells have been developed, the wells will be monitored for depth to water and the presence of free product and sheen using methods described above. The wells will then be purged of a minimum of three casing volumes of water, or until the wells are purged dry. During purging operations, the field parameters of pH, electrical conductivity and temperature will be monitored. Once the field parameters have been observed to stabilize and a minimum of three casing volumes has been purged or the wells purged dry, a groundwater sample will be collected from each monitoring well using a Teflon bailer. The bailer will be cleaned using an Alconox solution and clean water rinse prior to each use.

The samples will be transferred from the bailer to 40-milliliter glass Volatile Organic Analysis (VOA) vials and 1-liter amber glass bottles which will be sealed with Teflon-lined screw caps. The VOA vials will be overturned and tapped to assure that no air bubbles are present. The sample bottles will then be labeled and placed into a cooler with ice pending delivery to the State-certified hazardous waste testing laboratory. Chain of custody procedures will be observed for all sample handling. Water removed from the wells during purging activities will be stored in DOT-approved 55-gallon drums pending appropriate disposal.

#### Soil and Groundwater Sample Analysis

The soil samples from the boreholes for the monitoring wells and the groundwater samples from the monitoring wells will be analyzed at McCampbell Analytical, Inc. of Pacheco, California for TPH-G using EPA Method 5030 in conjunction with Modified EPA Method 8015, for BTEX using EPA Method 8020 and for MTBE using EPA Method 8260. McCampbell Analytical, Inc. is a State-accredited laboratory.

#### Report Preparation

Upon receipt of the laboratory analytical results, a report will be prepared. The report will contain documentation of field activities associated with the collection of the soil samples and installation, surveying, development and sampling of the groundwater monitoring wells; boring logs; well construction diagrams; a copy of the well head survey data; copies of the laboratory analytical reports and chain of custody documentation; a tabulated summary of the laboratory analytical results; a discussion of the local geology and hydrogeology; a discussion of the laboratory results; recommendations based upon the laboratory analytical results; and the signature and stamp of an appropriately registered professional.

SCHEDULE

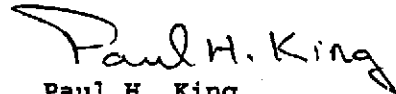
The following schedule addresses elements identified in this work plan.

<u>Activity</u>	<u>Calendar Days</u>
Work plan submittal to ACDEH.....	Day 0
Work plan approval by ACDEH.....	Day 7
Solicit bids for scope of work.....	Day 14
SWRCB UST Fund application submittal.....	Day 28
SWRCB UST Fund application approval.....	Day 42
Award work.....	Day 46
Permit application submittal to Public Works.....	Day 50
Permit application approval by Public Works.....	Day 57
Set drill date with driller.....	Day 61
Well installation .....	Day 68
Well development.....	Day 72
Well sample collection and surveying.....	Day 76
Receipt of soil and groundwater sample results.....	Day 83
Submittal of draft report to client for review.....	Day 97
Submittal of final well installation report to ACDEH.....	Day 111

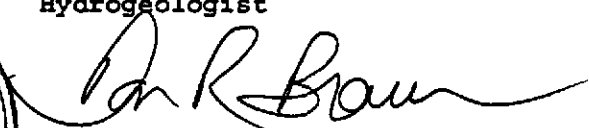
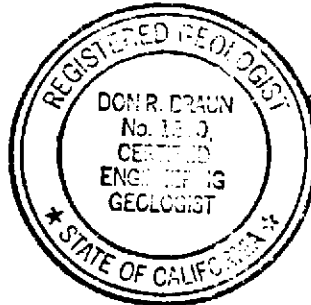
Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental



Paul H. King  
Hydrogeologist



Don R. Braun  
Certified Engineering Geologist  
Registration No.: 1310  
Expiration Date: 6/30/00

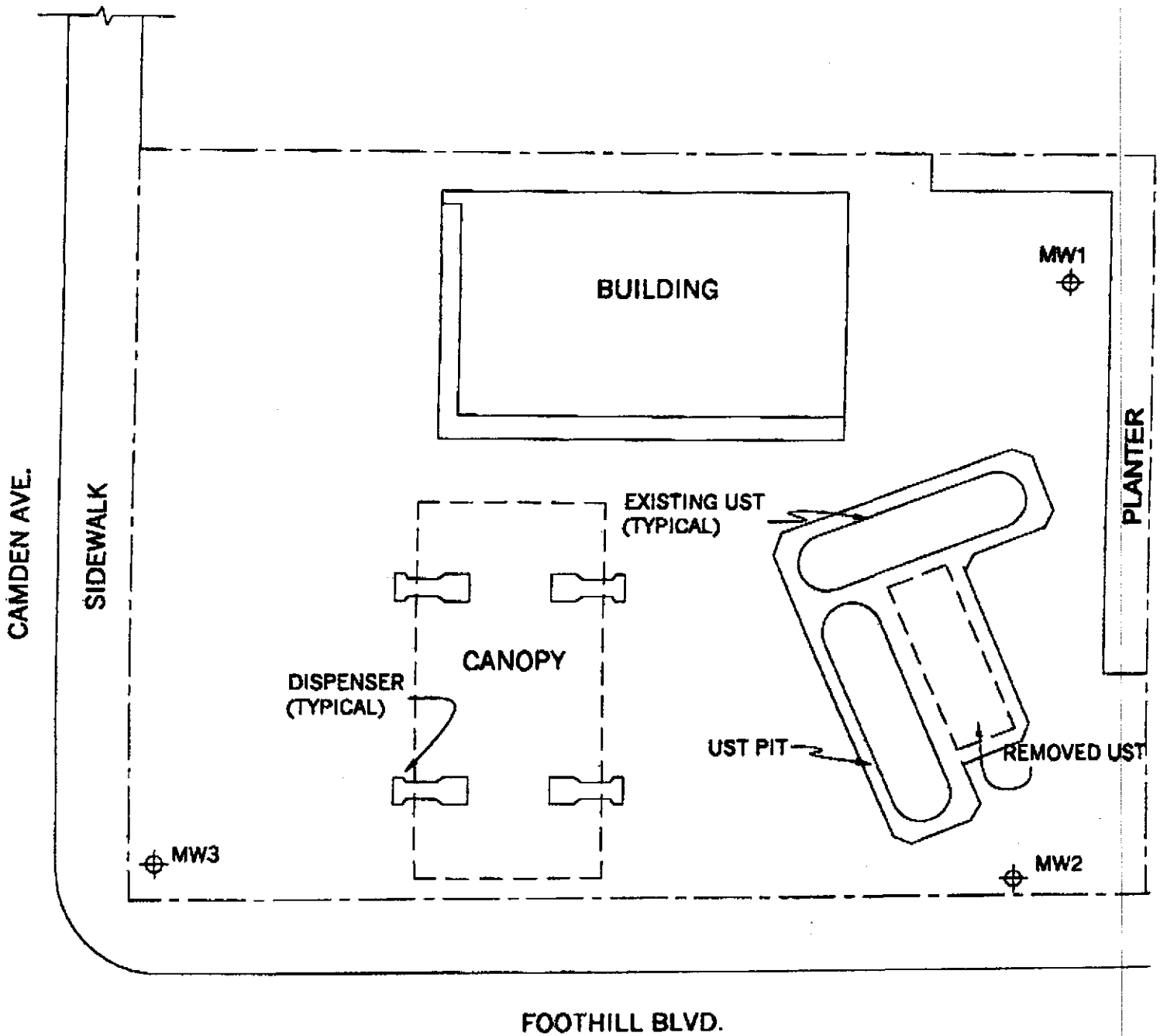
Attachment: Figure 1, Site Plan

cc: Mr. Ravi Sekhon, Sekhon Gasoline Station

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## LEGEND

⊕ PROPOSED GROUNDWATER MONITORING WELL LOCATION



Base map from:  
EVM/FMK DESIGNS  
9/3/98

0 10 20  
SCALE IN FEET

Figure 1  
Site Plan  
Sekhon Gasoline Station  
6500 Foothill Blvd.  
Oakland, California