



November 22, 1989

Mr. Walter Kaczmarek  
The Martin Group  
6475 Christie Avenue, Suite 500  
Emeryville, California 94608

Dear Mr. Kaczmarek:

**WORK PLAN FOR GROUNDWATER MONITORING AND FREE PRODUCT REMOVAL AT THE MARKETPLACE SITE, EMERYVILLE, CALIFORNIA**

This letter presents a work plan for a Self-Monitoring Program at the Marketplace Site in Emeryville, California. The Self-Monitoring Program will be implemented to meet requirements of the Alameda County Health Department (County) as discussed in our meeting with the County on November 20, 1989. The proposed monitoring program consists of quarterly sampling in January 1990, April 1990, July 1990, and October 1990. Wells located on Parcels 2, 3, and 4 are included in the program although Parcel 4 is owned by the City of Emeryville. The proposed monitoring program consists of the following:

- Quarterly monitoring of Wells W-1, W-4, W-7, W-8, W-10, W-13, W-14, W-16, and W-18 for analysis of total petroleum hydrocarbons as diesel (TPH/D) by the DHS Luft Manual Method.
- Quarterly monitoring of Wells W-15, W-16 and W-18 for benzene, toluene, xylenes, and ethyl benzene (BTXE) by the DHS Luft Manual Method;
- Semi-annual monitoring (April and October 1990) of Wells W-1, W-7, W-8, W-13, W-14, and W-16 for analysis of arsenic and lead by EPA Methods 7061 and 7420, respectively;
- Semi-annual monitoring of Wells W-8, W-13, W-14, W-16, and W-18 for polynuclear aromatics (PNAs) by EPA Method 610; and
- Semi-annual monitoring of total oil and grease (gravimetric) by Method 413.1 of Wells W-13, W-14, W-16 and W-18.

The logic for sampling at the proposed locations is detailed in Attachment 1. Site wide water level sounding will be conducted, water level contour maps will be prepared, and the results will be submitted in a brief letter

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report approximately six weeks after the sampling event. The results of the self-monitoring program will be reviewed at the end of one year and revisions to the program, if warranted, will be recommended for the following year.

Additionally, free product on the Marketplace site will continue to be removed from wells in the vicinity of Wells W-5 and W-17 on a bi-weekly basis as long as free product is detected at a measurable depth of one-quarter of an inch or greater. Until discussions are held with the City of Emeryville regarding the free product on Parcel 4, and during the discussion process, as an accommodation to the City of Emeryville, free product will be bailed from Wells W-5 and W-16 on a bi-weekly basis for up to a maximum of one year. Prior to removal of free product, the wells will be sounded with an oil-water interface probe to determine the amount of free product (as measured in inches) present in the well. The free product will be collected in a 55 gallon drum, stored on site for less than 90 days, manifested, and disposed of as hazardous waste. The results of the free product removal activities will also be reported on a quarterly basis.

The estimated costs associated with this work will be submitted to you by the end of the month. A scheduling chart for the work described above will also be prepared.

Should you have any questions, please do not hesitate to call.

Sincerely,

*Susan Gahry*

Susan Gahry  
Supervising Engineer

Attachment

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## ATTACHMENT 1

### TPH/D and BTXE

Upgradient and downgradient wells have been selected for analysis of TPH/D. Wells W-15, W-16 and W-18 have been selected for BTXE analysis since benzene has only been detected in Well W-16 and xylene has only been detected in Well W-15. Well W-18 is downgradient of Wells W-15 and W-16.

### Arsenic and Lead

The only wells in which metals detected in groundwater exceed State Maximum Contaminant Levels (MCLs) were Wells W-1 (for arsenic), W-7 (for lead), and W-8 (for arsenic). These wells, Well W-16, and downgradient Wells W-13 and W-14, have been selected for semi-annual monitoring of arsenic and lead.

### PNAs

Only one polynuclear aromatic compound, naphthalene, has been detected in groundwater from Well W-8 although the newer wells, W-16, W-17, and W-18, have never been sampled for PNAs. Well W-8, upgradient Wells W-16, W-18, and downgradient Wells W-13 and W-14 have been selected for semi-annual monitoring of PNAs.

### Oil and Grease

An oil and grease analysis detects a wider boiling point and molecular weight range of straight chain hydrocarbons than a TPH/D analysis. For diesel, jet fuel, kerosene, or fuel oil, the Regional Board recommends that groundwater be analyzed for TPH/D per their June 2, 1988 guidelines. Since the free product in well W-5 has been identified to be a heavy gas oil (fuel oil) or crude oil, the TPH/D analysis seems appropriate. An oil and grease analysis can be used as an alternate when heavy, straight chain hydrocarbons may be present. Thus, Wells W-13, W-14, W-16, and W-18 have been selected for semi-annual monitoring for oil and grease as well as TPH/D.