



# PORT OF OAKLAND

April 25, 1997

ENVIRONMENTAL  
PROTECTION  
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Mr. Barney Chan  
Alameda County Health Care Services Agency  
Environmental Protection Division  
1131 Harbor Bay Parkway, #250  
Alameda, CA 94502-6577

**SUBJECT: SITE STATUS REPORT: FINDINGS AND RECOMMENDED APPROACH - FORMER TANK NUMBERS MF25 AND MF26, METROPOLITAN OAKLAND INTERNATIONAL AIRPORT, UNITED AIRLINES HANGAR - ECONOMY PARKING LOT SITE, 1100 AIRPORT DRIVE, OAKLAND, CALIFORNIA**

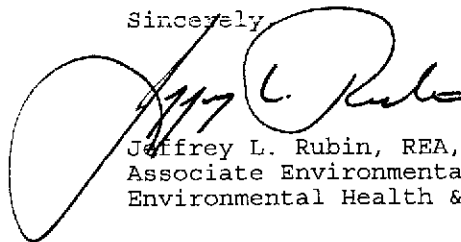
Dear Mr. Chan:

Enclosed is a status and recommended action report for the subject site entitled, *Findings and Recommendations - Tanks MF25 and MF26, United Airlines Hangar - Economy Parking Lot Site, Metropolitan Oakland International Airport (MOIA) South Field, 1100 Airport Drive, Oakland, California*. This report was prepared by Innovative Technical Solutions, Inc. (ITSI), one of the as-needed consultants retained by the Port of Oakland (Port). The report presents the results of additional activities for the site due to the presence of free product in two of the three monitoring wells currently in place.

Based on current site conditions, several more quarters of groundwater monitoring are recommended to monitor the presence and thickness of free product and dissolved-phase constituent concentrations. If the product thickness remains constant or increases in one or more of the wells during subsequent monitoring events, additional activities are recommended to evaluate and determine possible sources of the free product.

The Port intends to implement the recommended approach for the site beginning with the next round of groundwater monitoring. Should you have any questions regarding this approach or need additional information, please contact me at 272-1118. Thank you for your on-going assistance and support on this project.

Sincerely,



Jeffrey L. Rubin, REA, CPSS  
Associate Environmental Scientist  
Environmental Health & Safety Compliance

Enclosure

cc: Neil Werner - EH & SC (w/o enc)  
Mark O'Brien - EH & SC (w/o enc)  
Jeff Hess - ITSI (w/o enc)

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April 25, 1997

Project No. 95-113.24

Mr. Jeff Rubin  
Associate Environmental Scientist  
Port of Oakland  
530 Water Street  
Oakland, California 94607

**Findings and Recommendations**  
**Tanks MF25 and MF26, United Airlines Hangar-Economy Parking Lot Site**  
**Metropolitan Oakland International Airport (MOIA), South Field**  
**1100 Airport Drive**  
**Oakland, California**  
**(Work Order No. 028691)**

Dear Mr. Rubin:

As previously discussed<sup>1</sup>, additional work activities were recommended for the United Airlines Hangar-Economy Parking Lot Site due to the presence of free product in two of three monitoring wells located at the site.

Additional work activities included:

- Conduct historical review of any additional soil and groundwater investigation activities following the installation of three monitoring wells at the site.
- Evaluate and select a passive product recovery system for the monitoring wells containing free product (MW-2 and MW-3).
- Propose additional soil and groundwater investigation activities to complete site characterization and delineate source of free product, if possible.

The following are the results of efforts performed for the first two work activities listed above, and proposed approach for the third work activity.

**Historical Review of Additional Investigation Activities**

Port of Oakland personnel<sup>2</sup> indicated that further investigation activities may have been performed at the site following the installation of three monitoring wells. Innovative Technical Solutions, Inc. (ITSI) performed a search and review of available historical reports to determine if any subsequent investigation work had been conducted. Previous Port of Oakland

<sup>1</sup> *Conceptual Approach Memorandum*, September 17, 1996, and *Proposal for Continued Site Investigation*, October 1, 1996.

<sup>2</sup> Mr. Neil Werner, September 18, 1996, during meeting with Mr. Barney Chan of Alameda County.

consultants<sup>3,4</sup> were also contacted regarding historical work activities at the site. Based on this search and review, it appears that no additional soil and groundwater investigation activities have been performed at the site since installation of the monitoring wells in 1992 and 1995. Quarterly monitoring and sampling activities, however, have been performed since installation of the monitoring wells and is currently being performed by ITSI.

Based on the available historical information, previous work activities included:

- Tank removal and soil sampling (March 1992)<sup>5</sup>.
- Over-excavation and characterization soil sampling (March 1992)<sup>5</sup>.
- Installation of MW-1-3 [MW-1]<sup>6</sup>.
- Installation of MW-2-3 [MW-2] and MW-3-3 [MW-3] (April 1995)<sup>7,8</sup>.
- Quarterly monitoring and sampling of monitoring wells (MW-1 beginning May 1992, and MW-2 and MW-3 beginning April 1995)<sup>9,10</sup>.

### **Passive Product Recovery System Evaluation**

Based on our research and evaluation of a variety of available and appropriate passive product recovery techniques and equipment, ITSI has found the following two methodologies to be the most appropriate for the site:

- Hydrophobic skimming using a product skimmer.
- Sorbent skimming using a disposable skimming sock or tube.

Product and system comparison information, including associated costs and features, for product skimmer systems is summarized in Table 1, and for sorbent systems is summarized in Table 2.

Selection between the product skimmer and a disposable sorbent is contingent on several factors, including product volume and viscosity, liquid versus solid waste disposal requirements, a reusable versus disposable system, equipment and installation costs, and field serviceability and associated costs.

Hydrophobic Product Skimmers. After comparing a variety of available hydrophobic product recovery skimmer units, the 2-inch SOS-P (Passive Selective Oil Skimmer) by Clean Environment Equipment (CEE), appeared to be the best choice for the desired application. Some of the advantages of the SOS-P are as follows:

- Hydrophobic filter does not require regular in-field servicing or replacement.
- Unit does not require a surface vent line.

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<sup>3</sup> Personal communications, Mr. Brady Nagle, Alisto Engineering Group, 1996.

<sup>4</sup> Personal communications, Mr. Bradley Erskine, Uribe and Associates, 1996.

<sup>5</sup> *Report of Removal of Inactive Tanks MF-25 and MF-26*, by Uribe and Associates, dated May 1992.

<sup>6</sup> *Report of Monitoring Well Installation*, by Uribe and Associates, dated May 1992.

<sup>7</sup> *Work Plan for Additional Site Investigation Activities at 1100 Airport Drive*, by Uribe and Associates, dated December 1993.

<sup>8</sup> *Site Investigation Report, Port of Oakland - Oakland International Airport, United Airlines Hangar Area - Economy Parking Lot Site*, by Alisto Engineering Group, dated July 1995.

<sup>9</sup> Table 1, *Results of Groundwater Sampling Analysis for Petroleum Hydrocarbons, BTEX, and TDS, Por: of Oakland, Oakland International Airport, United Airlines Hangar Area - Economy Parking Lot Site*, by Alisto Engineering Group, dated February 1996.

<sup>10</sup> *Groundwater Monitoring and Sampling Report, Tanks MF25 and MF26, United Airlines Hangar-Economy Parking Lot Site, MOIA*, by Innovative Technical Solutions, Inc., dated February 1997.

- CEE will evaluate a product sample to determine appropriate hydrophobic filter screen size.
- System can be upgraded from passive to active product recovery quickly and inexpensively.
- Units are manufactured and serviced locally (Oakland, California).
- Units are cost competitive.

Disposable Sorbents. Product research of available disposable sorbents indicated two applicable products, as follows:

- SoakEase kit by Enviro Products - contains one reusable stainless steel canister and 15 disposable, 2-inch, product absorbing liner tubes.
- Monitoring Well Skimming Socks by New PIG Corporation - includes 30 disposable 2-inch product absorbing socks to be suspended in monitoring wells at the product-groundwater interface.

Selection between the two products depends somewhat on the length of time the sorbent system will be used. The SoakEase kit with stainless steel canister insures the sorbent sock is easily retrieved without undue contamination of the PVC well casing. However, the stainless steel canister would need to be thoroughly decontaminated or disposed once product recovery was completed or a skimmer system was installed. Additional information and features regarding these products are provided in Table 1.

As reported during the last quarterly monitoring event in January 1997, product thickness for the two monitoring wells historically containing free product have significantly decreased (decreasing from 0.16 feet to 0.02 feet in MW-2, and 0.02 feet to 0.005 feet in MW-3). This resulted in an insufficient volume of product in the wells to collect a product sample. Chemical analysis of the product, therefore, could not be performed to evaluate disposal options, nor to measure viscosity to determine the effectiveness of product recovery using a hydrophobic skimmer. Consequently, current product conditions may not warrant the installation of a hydrophobic product skimmer unit at this time. An interim approach may include using disposable skimming socks until a product sample can be collected and analyzed for final product recovery system selection.

#### **Recommended Approach for the Site**

Based on the current site conditions, continued monitoring of the site for several more quarters is recommended to monitor the presence and thickness of free product and dissolved-phase constituent concentrations.

If the product thickness is steady or increases from the recent measurements in one or more of the wells during subsequent monitoring events, additional activities are recommended to evaluate and determine possible sources of the free product.

The first step could be to redevelop the monitoring wells, to remove potential product buildup from the wells and insure product in the wells represents current site conditions, if appropriate. If product persists in one or more monitoring well following redevelopment, then collect a product sample for fuel-fingerprint analysis.

Based on the thickness of free product in the wells following redevelopment, and the results of the fuel-fingerprint analysis, a product recovery system may be installed and/or additional investigation activities conducted to determine the potential source of free product.

*extent is necessary.*

Based on our understanding of current site conditions, additional investigation activities would likely include the following:

- Prepare Workplan and Health and Safety Plan for additional investigation. ✓
- Perform subsurface utility clearance of proposed boring locations. ✓
- Advance soil borings outside the periphery of the former tank excavation and collect soil and groundwater samples for analysis.
- Prepare a Soil and Water Investigation (SWI) Report for submittal to the Port of Oakland and Alameda County Health Care Services Agency (Alameda County).

Approximately four to six soil boring locations would be drilled, based on a brief review of the historical analytical results available. Additional borings may be needed depending on field conditions encountered during drilling.

The borings will be located outside the sidewalls of the former tank excavation. Soil and groundwater samples will be collected using direct-push and HydroPunch II techniques, as appropriate. Soils encountered will be continuously field screened for evidence of contamination using olfactory and visual identification, and an organic vapor meter with photoionization detector (PID).

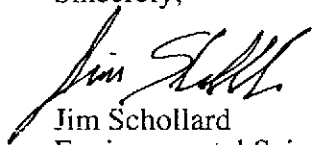
If field evidence indicates contamination is present, a sample of the impacted soil will be collected directly from the core-barrel and sealed in a clean glass sample jar for laboratory analysis. Sample depths, soil descriptions and field evidence of contamination will be recorded on a boring log. The exact number of soil samples will be determined based on field conditions.

Soil and groundwater samples will be submitted to the Port of Oakland contract laboratory for analysis according to criteria established in the Workplan. Tentatively, analytical criteria will consist primarily of petroleum hydrocarbons and volatile organic compounds (VOCs).

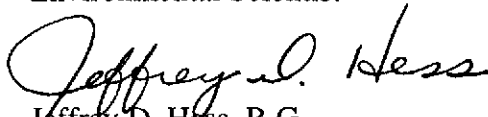
The next quarterly monitoring event for the site is scheduled for the end of April 1997. Additional information regarding the presence and thickness of product will be collected during the monitoring event.

Please give us a call if you have any questions or comments.

Sincerely,



Jim Schollard  
Environmental Scientist



Jeffrey D. Hess, R.G.  
Project Director

Attachments

TABLE 1

REVIEW OF PASSIVE PRODUCT RECOVERY SYSTEMS - SKIMMERS  
 UNITED AIRLINES HANGAR AREA - ECONOMY PARKING SITE  
 METROPOLITAN OAKLAND INTERNATIONAL AIRPORT (MOIA), SOUTH FIELD

Product Name	Manufacturer	Diameter (inches)	Cost	Minimum Product Thickness (inches)	Product Intake Range (inches)	Clear Canister?	Canister Capacity (gallons)	Optional Canister Capacities (gallons)	Field Replaceable Filter?	Surface Vent Line Required?	Warranty	Rental Available	Comments / Other Features
SOS-P	Clean Environment Equipment (CEE) 1133 7th Street Oakland, California 94607 (800) 537-1767	2	\$760	≤0.01	13.5	Y	0.1	0.2-0.7	NA	N	1 Year	Y	Fixed filter (change-outs not required) No assembly required Upgrade to active recovery system: Local manufacturing facility
		4	\$760	(sheen)	19.5		0.37	0.5-1.6					
PetroTrap	Enviro Products 1431 Rensen Street, Suite A Lansing, Michigan 98910 (800) 368-4764	2	\$885	sheen	24	N	0.2	Y	Y	Y	Lifetime	Y	Requires custom locking well cap Some assembly required Well known in industry
		4	\$885				0.5						
Accumulator	QED Environmental Systems, Inc. PO Box 3726 Ann Arbor, Michigan 48106 (510) 530-4511	2	\$575	sheen	NA	Y	0.1	N	Y	N	None	N	Free floating, self-locating Discontinued, product no longer supported Potential for sinking
		4	\$695				1.1						
Hydro-Skimmer	Wellex Environmental, Inc. 7514 Creek Glen Houston, Texas 77095 (713) 463-0888	2	\$349	sheen	48	Y	0.3	0.5	Y	N	Lifetime	N	Free floating, self-locating Not known in industry
		4	\$495				1.3	2.3					

TABLE 2

REVIEW OF PASSIVE PRODUCT RECOVERY SYSTEMS - SORBENTS  
 UNITED AIRLINES HANGAR AREA - ECONOMY PARKING SITE  
 METROPOLITAN OAKLAND INTERNATIONAL AIRPORT (MOIA), SOUTH FIELD

Product Name	Manufacturer	Diameter (inches)	Cost	Quantity/Order	Length (inches)	Sorption Capacity (gallons)	Warranty	Weighted?	Comments
SoakEase	Enviro Products 1431 Rensen Street, Suite A Lansing, Michigan 98910 (800) 368-4764	2	\$146	15	39	0.25	1 Year	Y	Each SoakEase kit contains one stainless steel canister and 15 (2") or 4 (4") disposable tubes.
		4	\$125	4		0.75			
Monitoring Well Skimming Sock	New PIG Corporation One Park Avenue Tipton, Pennsylvania 16684 (800) 621-7447	1.5	\$69	30	18	0.13	Lifetime	N	Disposable sock can be lowered down into monitoring wells with 2" or larger diameters Includes loop for attaching weight (weight not included)
Sump Skimmer		3	\$91	25	18	0.38	Lifetime	N	For use in sumps, tanks and pits (may be used down 4" or larger monitoring wells)
		8	\$98	12		1.8			