



Integrated  
Environmental  
Solutions

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April 12, 2001

H 692

Mr. Larry Seto  
ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

APR 16 2001

RE: ANNUAL 2001 - GROUNDWATER MONITORING REPORT  
ARAMARK UNIFORM SERVICES, INC.  
330 CHESTNUT STREET, OAKLAND, CALIFORNIA 94607

Dear Mr. Seto:

Please find attached one copy of the First Quarter 2001 Groundwater Monitoring Report for the above referenced facility.

If you have any questions or comments about the attached report, please feel free to contact me at (310) 645-6970 or David B. McKenzie at (734) 971 7080.

Sincerely,

RMT, Inc.

Tariq Ahmad  
Technical Manager

cc: Mr. Sam Niemann, The Wetlands Company (2)  
~~Mr. Phil Krejci, ARAMARK Uniform Services, Inc. (without attachments)~~  
Mr. David B. McKenzie, RMT, Inc.

1827 Walden Office Sq. Suite 300  
Shawmut, Ill. 60173



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**ANNUAL GROUNDWATER  
MONITORING  
AND  
PRODUCT RECOVERY  
PROGRESS REPORT**

APR 16 2001

**ARAMARK Uniform Services, Inc.  
330 Chestnut Street  
Oakland, California**

Prepared for  
ARAMARK Uniform Services, Inc.  
Schaumburg, Illinois

Prepared by  
RMT, Inc.  
Culver City, California

April 2001

Tariq Ahmad  
Technical Manager

David B. McKenzie  
Project Manager



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# Section 1

## Introduction

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### 1.1 Former Diesel Fuel UST Area

ARAMARK Uniform Services, Inc., (ARAMARK), owns and operates an industrial laundry facility located at 330 Chestnut Street in Oakland, California. A 2,000-gallon underground diesel fuel storage tank was formerly maintained at this facility to supply fuel for the operation of a boiler. The diesel fuel storage tank was removed from the facility in December 1988 and a tank closure documentation report was submitted to the Alameda County Health Care Services (ACHCS). Based on the information presented in the tank documentation report, the ACHCS requested that ARAMARK conduct post-closure sampling activities to determine whether the soil and groundwater surrounding the underground storage tank had been impacted by petroleum hydrocarbons.

Remedial investigation activities were conducted by RMT, Inc. (RMT) from March 1989 through November 1992, and included the advancement of soil borings and four groundwater monitoring wells (RAO-1 through RAO-4) in the vicinity of the former excavation area. The results of chemical analyses performed on groundwater samples collected from monitoring wells RAO-1 and RAO-2 identified the presence of total petroleum hydrocarbons (TPH) and benzene, toluene, and xylenes (BTX), and free-product was consistently observed in the groundwater monitoring well located within the former underground storage tank excavation (RAO-3). Because the results of the sampling activities indicated that the extent of petroleum hydrocarbon contamination was limited to the former tank excavation, a product recovery canister was installed in December 1992. To date, the product recovery system has recovered approximately 9,377 ml of free-product, however, the quantity of product during each subsequent sampling interval has significantly decreased. In addition, with the exception of the chemical analyses performed on groundwater samples collected during February 1995, TPH or BTX concentrations have not been identified in any groundwater sample collected since May 1993.

In July 1998, ACHCS requested that an additional groundwater monitoring well be installed downgradient of monitoring well RAO-3. In response to this request, RMT installed groundwater monitoring well (RAO-5) south of monitoring well RAO-3 and obtained groundwater samples in August 1998 after installation activities had been completed. During well installation activities, damaged monitoring well RAO-1 was abandoned in accordance with applicable regulations.

In a letter dated September 13, 2000, the ACHCS approved a reduction in the sampling frequency of well RAO-3 from quarterly to semi-annually. Wells RAO-2, RAO-4, and RAO-5 will continue to be sampled on an annual basis.

## **1.2 Former Diesel Fuel Dispenser and Mop Oil UST Area**

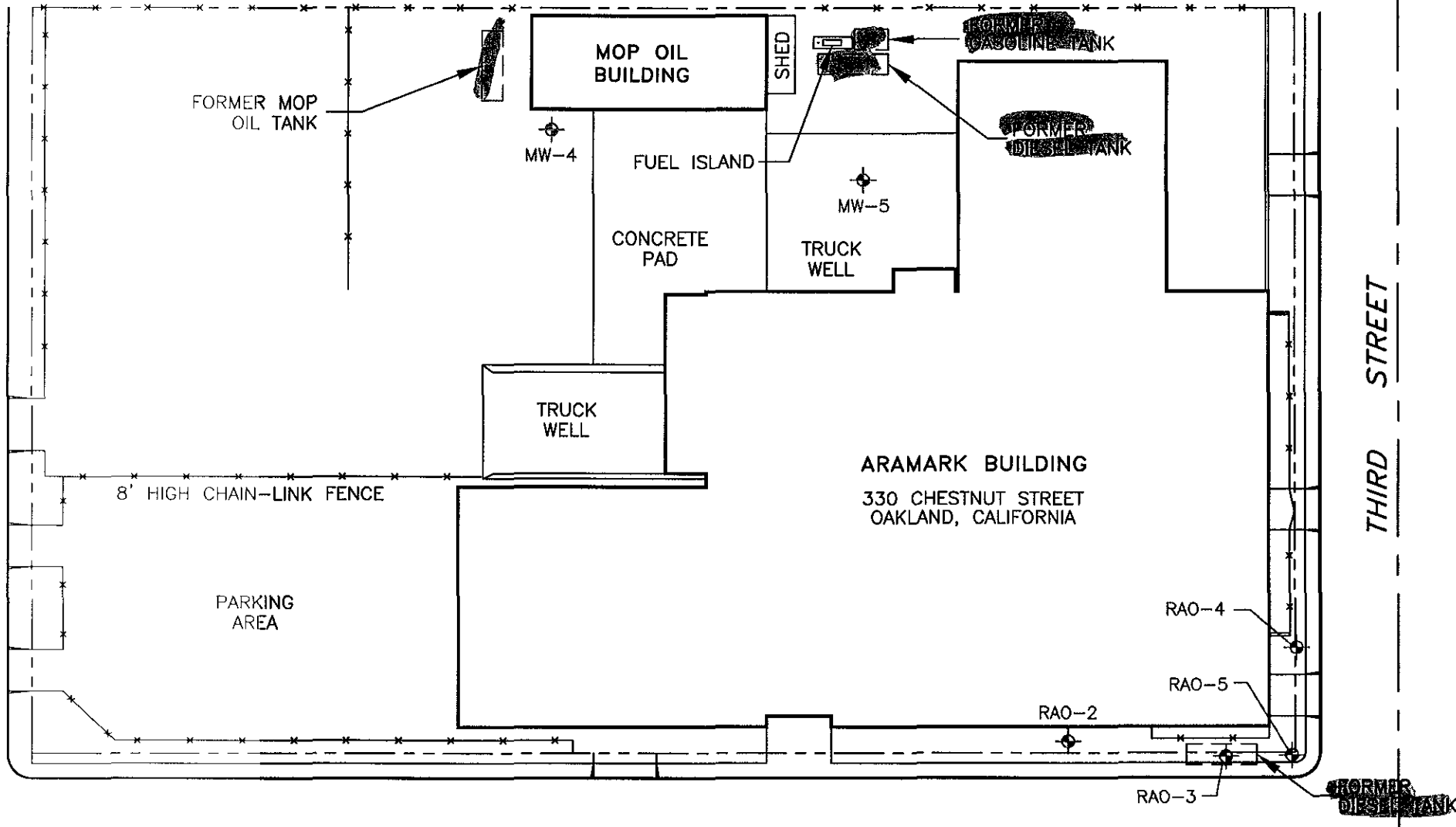
Two single-walled, steel, underground petroleum hydrocarbon storage tanks were maintained at this facility to supply fuel for the delivery vehicles (Figure 1). In addition, an underground mop oil storage tank was also maintained at the facility. RMT was retained by ARAMARK to document the removal and disposal of the underground storage tanks and perform soil sampling as required by the ACHCS. Tank removal activities were conducted during the period of September 1993 through January 1994. The results of the chemical analyses performed on the soil samples collected from the floor of the former diesel fuel dispenser vault excavations, the former mop oil tank excavation, and in the vicinity of the eastern section of the loading dock identified the presence of petroleum hydrocarbons.

In response to the request from the ACHCS, ARAMARK engaged the services of RMT to conduct soil and groundwater sampling activities in the vicinity of the former diesel fuel dispenser vaults and mop oil tank. Field activities were conducted on May 5, 1995 and included the advancement of two soil borings and the installation of two groundwater monitoring wells; MW-4 located in the vicinity of the former underground mop oil storage tank and MW-5 located in the vicinity of the former diesel fuel dispenser vaults (See Figure 1). Although the results of the chemical analyses performed on groundwater samples collected from the monitoring wells during 1995 identified the presence of total petroleum hydrocarbons at concentrations generally below 2 mg/L, TPH as stoddard solvent (TPH-SS) and TPH as diesel fuel (TPH-D) concentrations have been below detection limits throughout 1996 and during the 1997 sampling event. In addition, the presence of BTEX has never been identified at concentrations above the method detection limit in either monitoring well. In response to a letter from Mr. Larry Seto of ACHCS dated July 31, 1998, the sampling of wells MW-4 and MW-5 has been discontinued, however, wells MW-4 and MW-5 will not be abandoned until site closure has been granted.

## **1.3 Purpose and Scope**

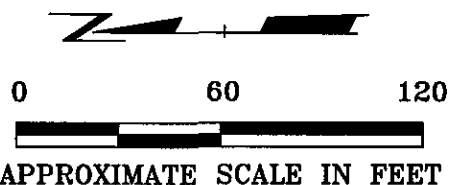
The purpose of this report is to summarize the methods, procedures, and results of annual groundwater monitoring activities conducted at the ARAMARK facility on January 19, 2001. The scope of work conducted during this reporting period included the following tasks:

- The measurement of the depth to groundwater in monitoring wells RAO-2, RAO-3, and RAO-5



LEGEND:

 GROUNDWATER MONITORING WELL  
RAO-3



|  |               |                      |
|--|---------------|----------------------|
| PROJECT: ARAMARK UNIFORM SERVICES<br>OAKLAND, CALIFORNIA |               |                      |
| SHEET TITLE: SITE PLAN                                   |               |                      |
| DRAWN BY: CRB  | SCALE:        | PROJ. NO. 12013.18   |
| CHECKED BY: TA   |               | FILE NO. Oakland.dwg |
| APPROVED BY: DBM   | DATE PRINTED: | FIGURE 1             |
| DATE: MARCH 2001   |               |                      |



RMT Inc. - Los Angeles  
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6065 Bristol Parkway  
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- The purging and sampling of monitoring wells RAO-2, RAO-3, and RAO-5. Samples collected from monitoring wells RAO-2, RAO-3, and RAO-5 were chemically analyzed to detect the presence of TPH-D and BTEX using US EPA SW-846 Methods 8015M and Method 8020, respectively.
- Preparation of an annual groundwater monitoring and product recovery progress report, including documentation of field procedures, analytical data, and a groundwater contour map.



## Section 2

# Groundwater Monitoring Activities

Groundwater sampling activities were conducted on January 19, 2001, and included obtaining static water level measurements from monitoring wells RAO-2, RAO-3, and RAO-5.

Monitoring well RAO-4 was inaccessible during the reporting period; the well screen casing at an approximate depth of 8ft below grade appears to be dislocated.

### 2.1 Static Water Level Measurements

Prior to collecting groundwater samples, the depth to groundwater was measured in each monitoring well using an electronic water level indicator. Static water levels measured on January 19, 2001 indicate that the depth to groundwater ranged from approximately 8.07 ft to 8.31 ft below top of each respective well casing and the groundwater surface elevation ranged from approximately -0.45 ft to 0.13 ft above mean sea level (MSL). Groundwater elevation data is summarized in Table 1.

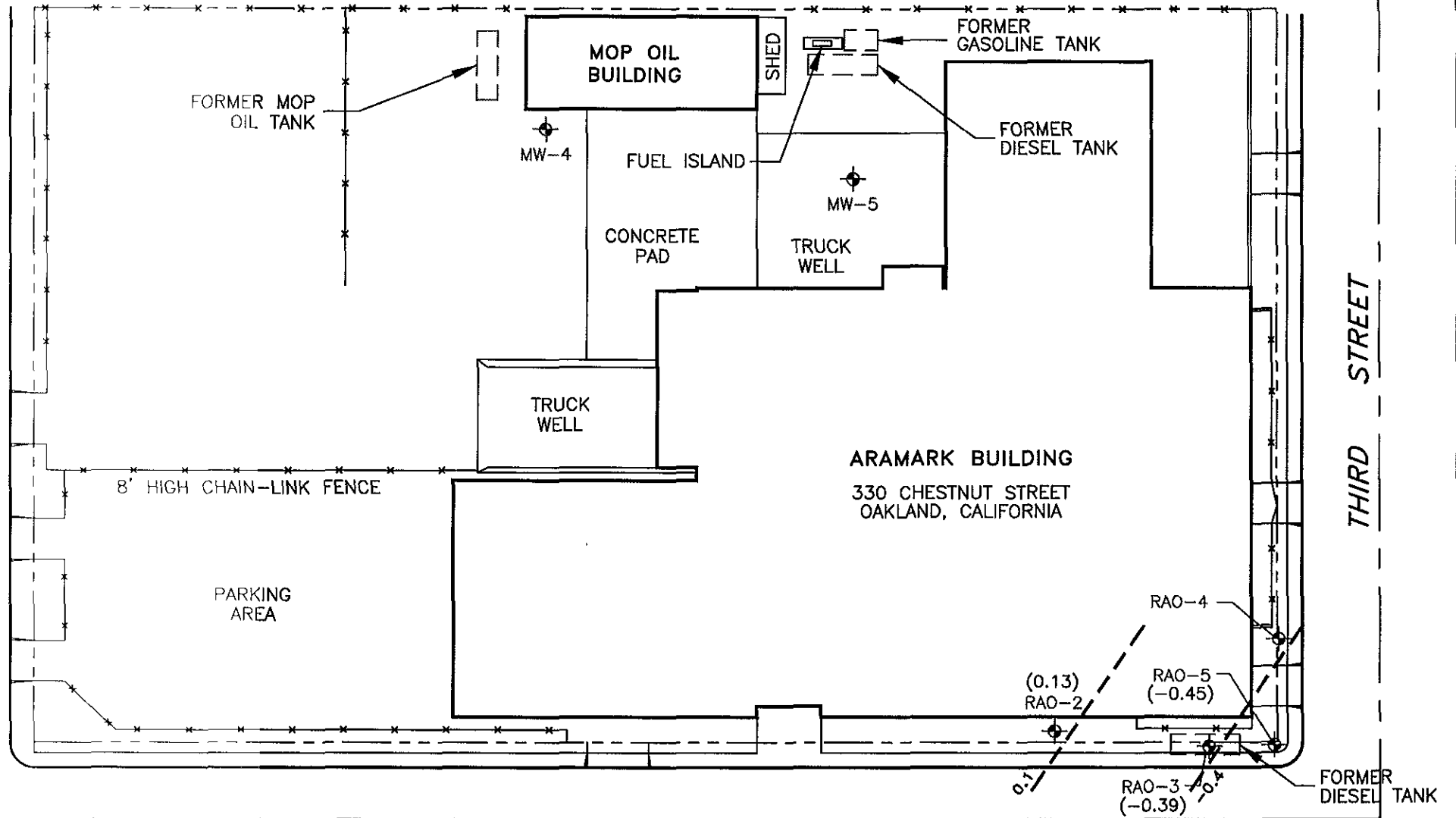
Table 1  
Static Water Level Measurement – January 19, 2001

| Monitoring Well Location | TOC Elevation (ft above MSL) | Depth to Water (ft below TOC) | Groundwater Elevation (ft above MSL) |
|--------------------------|------------------------------|-------------------------------|--------------------------------------|
| RAO-2                    | 8.44                         | 8.31                          | 0.13                                 |
| RAO-3                    | 7.92                         | 8.31                          | -0.39                                |
| RAO-4                    | 8.02                         | --                            | --                                   |
| RAO-5                    | 7.62                         | 8.07                          | -0.45                                |




### 2.2 Groundwater Elevation and Flow Direction

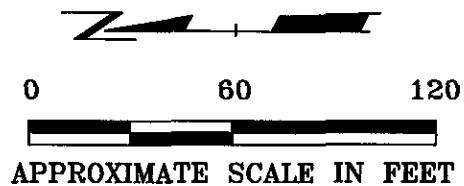
The groundwater flow direction observed in January 2001 is in a southeasterly direction with a horizontal hydraulic gradient of approximately 0.01 ft/ft. A groundwater contour map is presented in Figure 2.





**LEGEND:**

-  RAO-3 GROUNDWATER MONITORING WELL
-  (0.13) GROUNDWATER ELEVATION (IN FEET ABOVE MSL)
-  LINE OF EQUAL GROUNDWATER IN FEET ABOVE MSL



|  |               |                      |
|--|---------------|----------------------|
| PROJECT: ARAMARK UNIFORM SERVICES<br>OAKLAND, CALIFORNIA |               |                      |
| SHEET TITLE:<br>GROUNDWATER CONTOUR MAP - JANUARY 2001   |               |                      |
| DRAWN BY: CRB  | SCALE:        | PROJ. NO. 12013.18   |
| CHECKED BY: TA   |               | FILE NO. Oakland.dwg |
| APPROVED BY: DBM   | DATE PRINTED: | FIGURE 2             |
| DATE: MARCH 2001   |               |                      |

**RMT<sup>INC.</sup>**

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Culver City, CA 90230-6601

### **2.3 Groundwater Sample Collection**

Groundwater samples were collected from monitoring wells RAO-2, RAO-3, and RAO-5 on January 19, 2001. Prior to sampling, each monitoring well was purged using a disposable polyethylene bailer. The pH, temperature, and conductivity of the extracted groundwater were measured and recorded in groundwater sampling logs (Appendix A).

Once a minimum of three well casing volumes were extracted and pH, temperature, and conductivity readings had stabilized, groundwater samples were collected from each well utilizing a disposable polyethylene bailer equipped with a polyethylene stopcock, and dispensed directly into appropriate laboratory prepared containers provided by a California-certified laboratory. All samples were shipped to the laboratory according to US EPA protocol, including chain-of-custody procedures.

### **2.4 Chemical Analyses of Groundwater Samples**

Groundwater samples collected from monitoring wells RAO-2, RAO-3, and RAO-5 were chemically analyzed to detect the presence of TPH-D and BTEX using US EPA SW-846 Methods 8015M and 8020, respectively. The results of the chemical analyses are summarized in Table 2, and a copy of the laboratory report is included in Appendix B. All laboratory analyses were conducted by American Analytics, Chatsworth, California.

**Table 2**  
**Chemical Analyses of Groundwater (Former Diesel Fuel UST Area)**

| Sample Location | Sampling Date                                     | Parameter (ug/L) |         |              |         |       |
|-----------------|---|------------------|---------|--------------|---------|-------|
|                 |   | Benzene          | Toluene | Ethylbenzene | Xylenes | TPH-D |
| RAO-1           | Damaged monitoring well abandoned August 27, 1998 |                  |         |              |         |       |
|                 | 02-01-96  | <0.5             | <0.5    | <0.5         | <0.5    | 820   |
|                 | 08-02-95  | <0.5             | <0.5    | <0.5         | <0.5    | <50   |
|                 | 05-05-95  | <0.5             | <0.5    | <0.5         | <0.5    | <50   |
|                 | 02-03-95  | <0.5             | <0.5    | <0.5         | <0.5    | 560   |
|                 | 11-18-94  | <1.0             | <1.0    | <1.0         | <1.0    | <50   |
|                 | 08-12-94  | <1.0             | <1.0    | <1.0         | <1.0    | <50   |
|                 | 04-28-94  | <1.0             | <1.0    | <1.0         | <1.0    | <50   |
|                 | 01-29-94  | <1.0             | <1.0    | <1.0         | <1.0    | <50   |
|                 | 11-11-93  | <0.5             | <0.5    | <0.5         | <0.5    | <50   |
|                 | 08-02-93  | <0.3             | <0.3    | <0.3         | <0.5    | <10   |
| 05-11-93        | 0.4   | 0.5              | <0.3    | 1.0          | <10     |       |
| RAO-2           | 01-19-01  | <0.5             | <0.5    | <0.5         | <0.6    | <100  |
|                 | 02-02-00  | <0.3             | <0.3    | <0.3         | <0.6    | <200  |
|                 | 01-14-99  | <0.3             | <0.3    | <0.3         | <0.6    | <200  |
|                 | 01-17-98  | <0.3             | <0.3    | <0.3         | <0.6    | <200  |
|                 | 02-18-97  | <0.3             | <0.3    | <0.3         | <0.6    | <200  |
|                 | 11-14-95  | <0.5             | <0.5    | <0.5         | <0.5    | 870   |
|                 | 08-02-95  | <0.5             | <0.5    | <0.5         | <0.5    | <50   |
|                 | 05-05-95  | <0.5             | <0.5    | <0.5         | <0.5    | <50   |
|                 | 02-03-95  | <0.5             | <0.5    | <0.5         | <0.5    | <50   |
|                 | 11-18-94  | <1.0             | <1.0    | <1.0         | <1.0    | <50   |
|                 | 08-12-94  | <1.0             | <1.0    | <1.0         | <1.0    | <50   |
|                 | 04-28-94  | <1.0             | <1.0    | <1.0         | <1.0    | <50   |
|                 | 01-29-94  | <1.0             | <1.0    | <1.0         | <1.0    | <50   |
|                 | 11-11-93  | <0.5             | <0.5    | <0.5         | <0.5    | <50   |
|                 | 08-02-93  | <0.3             | <0.3    | <0.3         | <0.5    | <10   |
| 05-11-93        | 0.4   | 1.0              | <0.3    | 1.0          | 56      |       |

**Table 2 (Cont'd)**  
**Chemical Analyses of Groundwater (Former Diesel Fuel UST Area)**

| Sample Location | Sampling Date         | Parameter (ug/L) |         |              |         |           |
|-----------------|-----------------------|------------------|---------|--------------|---------|-----------|
|                 |                       | Benzene          | Toluene | Ethylbenzene | Xylenes | TPH-D     |
| RAO-3           | 01-19-01              | <0.5             | <0.5    | <0.5         | <1      | 14,000    |
|                 | 09-14-00              | <0.5             | <0.5    | 0.62         | <1      | 2,700     |
|                 | 02-02-00              | <0.5             | <0.5    | <0.5         | <1      | 10,000    |
|                 | 10-05-99              | <0.5             | <0.5    | 0.67         | 5.2     | 950       |
|                 | 07-30-99              | <0.3             | <0.3    | 0.46         | <0.6    | 4,900     |
|                 | 04-07-99 <sup>a</sup> | --               | --      | --           | --      | --        |
|                 | 01-14-99              | 0.30             | <0.3    | <0.3         | <0.6    | 1,900     |
|                 | 08-28-98 <sup>a</sup> | --               | --      | --           | --      | --        |
|                 | 01-17-98 <sup>a</sup> | --               | --      | --           | --      | --        |
|                 | 10-17-97              | 0.79             | <0.3    | 3.6          | 3.5     | 46,000    |
|                 | 11-15-96              | 0.33             | <0.3    | 0.61         | <0.6    | 24,000    |
|                 | 08-06-96              | 0.45             | <0.3    | <0.3         | <0.6    | 11,000    |
|                 | 05-10-96              | 1.8              | <0.3    | 3.0          | 5.5     | 2,000,000 |
|                 | 02-01-96              | 16               | <0.5    | 55           | <0.5    | 1,700,000 |
| RAO-4*          | 01-14-99              | 0.30             | <0.3    | <0.3         | <0.6    | 340       |
|                 | 01-17-98              | <0.3             | <0.3    | <0.3         | 0.71    | <200      |
|                 | 02-18-97              | <0.3             | <0.3    | <0.3         | <0.6    | <200      |
|                 | 11-14-95              | <0.5             | <0.5    | <0.5         | <0.5    | 800       |
|                 | 08-02-95              | <0.5             | <0.5    | <0.5         | <0.5    | <50       |
|                 | 05-05-95              | <0.5             | <0.5    | <0.5         | <0.5    | <50       |
|                 | 02-03-95              | <0.5             | <0.5    | <0.5         | <0.5    | <50       |
|                 | 11-18-94              | <1.0             | <1.0    | <1.0         | <1.0    | <50       |
|                 | 08-12-94              | <1.0             | <1.0    | <1.0         | <1.0    | <50       |
|                 | 04-28-94              | <1.0             | <1.0    | <1.0         | <1.0    | <50       |
|                 | 01-29-94              | <1.0             | <1.0    | <1.0         | <1.0    | <50       |
|                 | 11-11-93              | <0.5             | <0.5    | <0.5         | <0.5    | <50       |
|                 | 08-02-93              | <0.3             | <0.3    | <0.3         | <0.5    | <10       |
| 05-11-93        | <0.3                  | <0.3             | <0.3    | <0.5         | <10     |           |
| RAO-5           | 01-19-01              | <0.5             | <0.5    | <0.5         | <1      | 120       |
|                 | 02-02-00              | <0.5             | <0.5    | <0.5         | <1      | <200      |
|                 | 01-14-99              | <0.3             | <0.3    | <0.3         | 0.75    | <200      |
|                 | 08-28-98              | <1.0             | <1.0    | <1.0         | <1.0    | <200      |
| Blank           | 01-19-01              | <0.5             | <0.5    | <0.5         | <1.0    | --        |

<sup>a</sup> Monitoring well damaged

**Table 3**  
**Chemical Analyses of Groundwater (Former Dispenser and Mop Oil UST Area)**

| Sample Location | Sampling Date | Parameter (ug/L) |         |               |         |        |       |       |
|-----------------|---------------|------------------|---------|---------------|---------|--------|-------|-------|
|                 |               | Benzene          | Toluene | Ethyl Benzene | Xylenes | TPH-SS | TPH-K | TPH-D |
| MW-4            | 01-17-98      | --               | --      | --            | --      | <200   | <200  | <200  |
|                 | 02-18-97      | --               | --      | --            | --      | <200   | <200  | <200  |
|                 | 11-15-96      | --               | --      | --            | --      | --     | --    | <200  |
|                 | 08-06-96      | <0.3             | <0.3    | <0.3          | <0.6    | <200   | <200  | <200  |
|                 | 05-10-96      | <0.3             | <0.3    | <0.3          | <0.3    | <200   | <200  | <200  |
|                 | 02-01-96      | <0.5             | <0.5    | <0.5          | <0.5    | <500   | <500  | <500  |
|                 | 11-14-95      | <0.5             | <0.5    | <0.5          | <0.5    | --     | --    | 1,100 |
|                 | 08-02-95      | --               | --      | --            | --      | --     | --    | 180   |
|                 | 05-05-95      | --               | --      | --            | --      | --     | --    | 500   |
| MW-5            | 01-17-98      | --               | --      | --            | --      | <200   | <200  | <200  |
|                 | 02-18-97      | --               | --      | --            | --      | <200   | <200  | <200  |
|                 | 11-15-96      | --               | --      | --            | --      | --     | --    | <200  |
|                 | 08-06-96      | <0.3             | <0.3    | <0.3          | <0.6    | <200   | <200  | <200  |
|                 | 05-10-96      | <0.3             | <0.3    | <0.3          | <0.3    | <200   | <200  | 350   |
|                 | 02-01-96      | <0.5             | <0.5    | <0.5          | <0.5    | 840    | <500  | <500  |
|                 | 11-14-95      | <0.5             | <0.5    | <0.5          | <0.5    | --     | --    | 2,100 |
|                 | 08-02-95      | <0.5             | <0.5    | <0.5          | <0.5    | --     | --    | 380   |
|                 | 05-05-95      | <0.5             | <0.5    | <0.5          | <0.5    | --     | --    | 1,100 |

--: Not Analyzed.

## 2.5 Disposal of Purged Groundwater

Groundwater extracted during monitoring well purging activities was contained in 55-gal DOT-approved drums, labeled with the date, generator's name, site location, source, and stored on-site in a designated area pending disposal.



## Section 3

# Product Recovery Activities

In December 1992, a passive product recovery system, consisting of a removable canister (a buoy sheathed by a semi-permeable hydrophobic membrane atop a product storage sump) was installed in monitoring well RAO-3 located in the vicinity of the former diesel fuel UST excavation. During the period from December 1992 through May 1995, approximately 6,202-mL of free-product was recovered, however, product recovery activities conducted during the period from June 1995 through October 1995 did not result in the recovery of any additional free product. Based on these findings, in November 1995, the ACHCS requested that ARAMARK collect groundwater samples from the product recovery well to determine the groundwater quality in the vicinity of the former diesel fuel UST excavation, however, it was agreed that the sampling activities would be postponed until the residual petroleum hydrocarbon buildup on the well screen and in the surrounding sand pack could be remediated. With ACHCS approval, RMI added approximately 15 gallons of a dilute solution (5%) of hydrogen peroxide ( $H_2O_2$ ) to monitoring well RAO-3 on a quarterly basis during the period between November 1995 and December 1997 in order to remove any residual petroleum hydrocarbons that may still have remained within the well packing.

On August 18, 1997, and April 24, 1998, monitoring well RAO-3 was subjected to augmented liquid extraction (ALE) to remove free phase hydrocarbons (FPH) and dissolved phase contamination from the vicinity of the wellbore. A vacuum truck was used to apply a vacuum pressure at well RAO-3 by inserting a slotted drop pipe inside the sealed well for approximately 40 minutes. Monitoring well RAO-3 was allowed to recharge for approximately 45 minutes before the vacuum was applied for an additional 20 minutes. A total of 15 gallons of FPH and approximately 650 gallons of an oil/water mixture were removed during the two ALE events, respectively. Wastewater generated was transported as non-RCRA hazardous waste to the Evergreen Oil recycling facility located in Newark, California.

No free product was identified in well RAO-3 during the fourth quarter 2000 and first quarter 2001 period (October through December 2000 and January through March 2001, respectively). Since inception of free product collection activities (December 1992), approximately 2.51 gallons of free product have been recovered to date using the passive product recovery canister. A summary of product recovery operations is presented in Appendix C.



## Section 4

# Quality Assurance/Quality Control (QA/QC)

---

QA/QC procedures used during sampling included the analysis of a field blank. Laboratory QA/QC procedures included matrix and method spike, spike duplicate recovery measurement, and analysis of method blanks. Chemical analysis of field and method blanks did not identify the presence of BTEX above method detection levels.



# Appendix A

## Groundwater Sample Collection Data

---



## GROUNDWATER SAMPLE COLLECTION DATA

|               |                            |
|---------------|----------------------------|
| Project Name: | Aramark - Oakland          |
| Sampling Date | January 19, 2001           |
| Sampled By:   | Oliver Carreon (RMT, Inc.) |

| Monitoring Well | Purge Number | Volume (Gal) | Temp (°C) | pH   | Turbidity* (NTU) | Cond. (uS/cm) | DTW (ft) |
|-----------------|--------------|--------------|-----------|------|------------------|---------------|----------|
| RAO-2           | 1            | 1            | 17.8      | 7.85 | --               | 75            | 8.31     |
|                 | 2            | 2            | 17.9      | 8.10 | --               | 81            |          |
|                 | 3            | 4            | 18.1      | 8.3  | --               | 83            |          |
| RAO-3           | 1            | 1            | 18.3      | 8.3  | --               | 88            | 8.31     |
|                 | 2            | 2            | 18.2      | 8.34 | --               | 75            |          |
|                 | 3            | 3            | 18.1      | 8.5  | --               | 80            |          |
| RAO-5           | 1            | 1            | 19.6      | 8.42 | --               | 83            | 8.07     |
|                 | 2            | 3            | 19.3      | 8.51 | --               | 81            |          |
|                 | 3            | 5            | 19.2      | 8.53 | --               | 82            |          |

\*: Instrument malfunctioned.

Legend:

- Gal - gallons
- °C - degrees Centigrade
- NTU - nephelometric turbidity units
- uS/cm - microsiemens per centimeter
- Cond. - conductivity
- ft - feet
- DTW - depth to water
- Temp - temperature



# Appendix B

## Laboratory Report

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LABORATORY ANALYSIS RESULTS

Client: RMT, Inc.  
Project No.: N/A  
Project Name: Aramark, Oakland  
Sample Matrix: Water  
Method: EPA 8020 (BTEX)

AA Project No.: A39466  
Date Received: 01/23/01  
Date Reported: 01/30/01  
Units: ug/L

| Date Sampled:     | 01/19/01 | 01/19/01 | 01/19/01 | 01/19/01 |     |
|-------------------|----------|----------|----------|----------|-----|
| Date Analyzed:    | 01/24/01 | 01/24/01 | 01/24/01 | 01/29/01 |     |
| AA ID No.:        | 116459   | 116460   | 116461   | 116462   |     |
| Client ID No.:    | RAO-3    | RAO-2    | RAO-5    | T.B.     | MRL |
| <b>Compounds:</b> |          |          |          |          |     |
| Benzene           | <0.5     | <0.5     | <0.5     | <0.5     | 0.5 |
| Ethylbenzene      | <0.5     | <0.5     | <0.5     | <0.5     | 0.5 |
| Toluene           | <0.5     | <0.5     | <0.5     | <0.5     | 0.5 |
| Xylenes           | <1       | <1       | <1       | <1       | 1   |

MRL: Method Reporting Limit

George Havalas  
Laboratory Director



LABORATORY QA/QC REPORT

Client: RMT, Inc.  
Project Name: Aramark, Oakland  
Method: EPA 8020 (BTEX)  
Sample ID: Matrix Spike  
Concentration: 20 ug/L

AA ID No.: 116459  
Project No.: N/A  
AA Project No.: A39466  
Date Analyzed: 01/24/01  
Date Reported: 01/26/01

| Compounds    | Result (ug/L) | Spike Recovery (%) | Dup. Result (ug/L) | Spike/Dup. Recovery (%) | RPD (%) | Accept. Rec. Range (%) |
|--------------|---------------|--------------------|--------------------|-------------------------|---------|------------------------|
| Benzene      | 14            | 70                 | 17.0               | 85                      | 19      | 65 - 135               |
| Ethylbenzene | 16            | 80                 | 15.6               | 78                      | 3       | 77 - 123               |
| Toluene      | 17            | 83                 | 15.7               | 79                      | 5       | 66 - 134               |
| Xylenes      | 16            | 81                 | 15.6               | 78                      | 4       | 73 - 127               |

George Havalas  
Laboratory Director



LABORATORY QA/QC REPORT

Client: RMT, Inc.  
Project Name: Aramark, Oakland  
Method: EPA 8020 (BTEX)  
Sample ID: Matrix Spike  
Concentration: 20 ug/L

AA ID No.: 116462  
Project No.: N/A  
AA Project No.: A39466  
Date Analyzed: 01/29/01  
Date Reported: 01/30/01

| Compounds    | Result (ug/L) | Spike Recovery (%) | Dup. Result (ug/L) | Spike/Dup. Recovery (%) | RPD (%) | Accept.Rec. Range (%) |
|--------------|---------------|--------------------|--------------------|-------------------------|---------|-----------------------|
| Benzene      | 19.2          | 96                 | 19.4               | 97                      | 1       | 65 - 135              |
| Ethylbenzene | 18.8          | 94                 | 21.2               | 106                     | 12      | 77 - 123              |
| Toluene      | 22.4          | 112                | 21.1               | 106                     | 6       | 66 - 134              |
| Xylenes      | 22.2          | 111                | 21.2               | 106                     | 5       | 73 - 127              |

George Havalas  
Laboratory Director



LABORATORY ANALYSIS RESULTS

Client: RMT, Inc.  
Project No.: N/A  
Project Name: Aramark, Oakland  
Sample Matrix: Water  
Method: EPA 8015M (Diesel Range Org.)

AA Project No.: A39466  
Date Received: 01/23/01  
Date Reported: 01/26/01  
Units: mg/L

| AA I.D. No. | Client I.D. No. | Date Sampled | Date Extracted | Date Analyzed | Results | MRL |
|-------------|-----------------|--------------|----------------|---------------|---------|-----|
| 116459      | RAO-3           | 01/19/01     | 01/25/01       | 01/25/01      | 14      | 0.1 |
| 116460      | RAO-2           | 01/19/01     | 01/25/01       | 01/25/01      | <0.1    | 0.1 |
| 116461      | RAO-5           | 01/19/01     | 01/25/01       | 01/25/01      | 0.12    | 0.1 |

MRL: Method Reporting Limit

George Havalias  
Laboratory Director



LABORATORY QA/QC REPORT

Client: RMT, Inc.  
Project Name: Aramark, Oakland  
Method: EPA 8015M (Diesel Range Org.)  
Sample ID: Matrix Spike  
Concentration: 2 mg/L

AA ID No.: 116460  
Project No.: N/A  
AA Project No.: A39466  
Date Analyzed: 01/25/01  
Date Reported: 01/26/01

| Compounds             | Result (mg/L) | Spike Recovery (%) | Dup. Result (mg/L) | Spike/Dup. Recovery (%) | RPD (%) | Accept.Rec. Range (%) |
|-----------------------|---------------|--------------------|--------------------|-------------------------|---------|-----------------------|
| Diesel Range Organics | 2.36          | 118                | 2.33               | 117                     | 1       | 19 - 151              |

George Havalas  
Laboratory Director



# AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

Tel: 818-998-5547 FAX: 818-998-7258

DATE: 1/22/01

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|  |        |         |       |             |                      |   |   |   |                    |                                 |
|--|--------|---------|-------|-------------|----------------------|---|---|---|--------------------|---------------------------------|
| AA Client: <u>RMT</u>  |        |         |       |             |                      | Phone: <u>(310) 645-6970</u>  |   | Sampler's Name: <u>OLIVER CARLSON</u>   |                    |                                 |
| Project Manager: <u>TARIQ AHMAD</u>                                    |        |         |       |             |                      | P.O. No.:   |   | Sampler's Signature: <u>[Signature]</u> |                    |                                 |
| Project Name:  |        |         |       |             |                      | Project No.:  |   | Project Manager's Signature:            |                    |                                 |
| Job Name and Address: <u>AKAMARK OAKLAND</u><br><u>330 CHESTNUT ST</u> |        |         |       |             |                      | ANALYSIS REQUIRED (Test Name)   |   |   |                    |                                 |
|  |        |         |       |             |                      | Special Test Requirements / Comments<br>i.e., - Turnaround Time, Detection Limits, Data Package.....) |   |   |                    |                                 |
| Client's ID  | AA ID# | Date    | Time  | Sample Type | Number of Containers | 5020 Brix<br>SALS TH-D  |   |   |                    |                                 |
| RAO-3  | 116459 | 1/19/01 | 1200N | AQ          | 3                    | X   | X |   |                    |                                 |
| RAO-2  | 116460 | 1/19/01 | 1130A | ↓           | 3                    | X   | X |   |                    |                                 |
| RAO-5  | 116461 | 1/19/01 | 1100A |             | 3                    | X   | X |   |                    |                                 |
| T.B.   | 116462 |         |       |             | 1                    | (X)   |   |   |                    |                                 |
|  |        |         |       |             |                      | (X): add-on per Oliver, 01/26/01  |   |   |                    |                                 |
| <b>SAMPLE INTEGRITY TO BE FILLED IN BY RECEIVING LAB</b>               |        |         |       |             |                      | Relinquished by: <u>OLIVER CARLSON</u>  |   | Date: <u>1/22/01</u>                    | Time: <u>1200N</u> | Received by: _____              |
| Samples Intact Yes <u>/</u> No _____                                   |        |         |       |             |                      | Relinquished by: _____  |   | Date: <u>1/23/01</u>                    | Time: <u>1050</u>  | Received by: <u>[Signature]</u> |
| Samples Properly Cooled Yes _____ No _____                             |        |         |       |             |                      | Relinquished by: _____  |   | Date: _____                             | Time: _____        | Received by: _____              |
| Samples Accepted Yes _____ No _____                                    |        |         |       |             |                      | Relinquished by: _____  |   | Date: _____                             | Time: _____        | Received by: _____              |
| If Not Why _____   |        |         |       |             |                      | Relinquished by: _____  |   | Date: _____                             | Time: _____        | Received by: _____              |
| AA Project No: <u>A 39466</u>  |        |         |       |             |                      | Relinquished by: _____  |   | Date: _____                             | Time: _____        | Received by: _____              |





# Appendix C

## Product Recovery Logs

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Passive Product Recovery Observations (RAO-3)

| Sampling Date | Volume of Product Removed (mL) | Volume of Water Removed (mL) | Depth to Product (ft-bgs) | Depth to Water (ft-bgs) | Thickness of Product (ft) |
|---------------|--------------------------------|------------------------------|---------------------------|-------------------------|---------------------------|
| 12-03-92      | 0                              | 20                           | 8.65                      | 8.67                    | 0.02                      |
| 12-04-92      | 0                              | 0                            | 8.61                      | 8.63                    | 0.02                      |
| 12-08-92      | 18                             | 0                            | 8.52                      | 8.52                    | 0.00                      |
| 12-09-92      | 10                             | 0                            | 8.24                      | 8.24                    | 0.00                      |
| 12-10-92      | 0                              | 3                            | 8.02                      | 8.02                    | 0.00                      |
| 12-14-92      | 30                             | 200                          | 8.28                      | 8.29                    | 0.01                      |
| 12-15-92      | 0                              | 0                            | 8.32                      | 8.32                    | 0.00                      |
| 12-16-92      | 0                              | 0                            | 8.52                      | 8.52                    | 0.00                      |
| 12-18-92      | 18                             | 0                            | 8.63                      | 8.66                    | 0.03                      |
| 12-21-92      | 10                             | 0                            | 8.39                      | 8.42                    | 0.03                      |
| 12-22-92      | 20                             | 30                           | 8.56                      | 8.58                    | 0.02                      |
| 12-23-92      | 18                             | 0                            | 8.35                      | 8.37                    | 0.02                      |
| 12-24-92      | 22                             | 0                            | 8.42                      | 8.53                    | 0.11                      |
| 12-28-92      | 15                             | 0                            | 8.53                      | 8.64                    | 0.01                      |
| 12-29-92      | 20                             | 0                            | 8.58                      | 8.60                    | 0.02                      |
| 12-30-92      | 18                             | 0                            | 8.22                      | 8.24                    | 0.02                      |
| 01-04-93      | 23                             | 18                           | 8.45                      | 8.47                    | 0.02                      |
| 01-05-93      | 12                             | 0                            | 8.28                      | 8.30                    | 0.02                      |
| 01-06-93      | 10                             | 0                            | 8.05                      | 8.48                    | 0.43                      |
| 01-07-93      | 8                              | 0                            | 8.64                      | 8.66                    | 0.02                      |
| 01-08-93      | 3                              | 10                           | 8.36                      | 8.37                    | 0.01                      |
| 01-11-93      | 8                              | 0                            | 8.02                      | 8.16                    | 0.14                      |
| 01-12-93      | 13                             | 8                            | 7.68                      | 8.06                    | 0.38                      |
| 01-13-93      | 45                             | 0                            | 7.64                      | 8.04                    | 0.40                      |
| 01-14-93      | 40                             | 0                            | 8.00                      | 8.32                    | 0.32                      |
| 01-15-93      | 40                             | 0                            | 7.98                      | 8.30                    | 0.32                      |
| 01-18-93      | 48                             | 0                            | 8.00                      | 8.11                    | 0.11                      |
| 01-19-93      | 50                             | 0                            | 8.00                      | 8.22                    | 0.22                      |
| 01-20-93      | 44                             | 0                            | 8.00                      | 8.02                    | 0.02                      |
| 01-21-93      | 5                              | 40                           | 7.84                      | 8.00                    | 0.16                      |
| 01-22-93      | 450                            | 42                           | 7.74                      | 7.98                    | 0.24                      |
| 02-04-93      | 25                             | 500                          | 7.99                      | 8.45                    | 0.45                      |
| 03-25-93      | 380                            | 70                           | 8.11                      | 8.20                    | 0.09                      |
| 04-09-93      | 500                            | 18                           | 8.11                      | 8.20                    | 0.09                      |
| 04-23-93      | 210                            | 60                           | 7.49                      | 7.51                    | 0.02                      |
| 05-03-93      | 560                            | 90                           | 8.54                      | 8.58                    | 0.04                      |
| 05-11-93      | 38                             | 114                          | 8.35                      | 8.45                    | 0.10                      |

Passive Product Recovery Observations (RAO-3)

| Sampling Date | Volume of Product Removed (mL) | Volume of Water Removed (mL) | Depth to Product (ft-bgs) | Depth to Water (ft-bgs) | Thickness of Product (ft) |
|---------------|--------------------------------|------------------------------|---------------------------|-------------------------|---------------------------|
| 05-20-93      | 1                              | 0                            | 8.39                      | 8.42                    | 0.03                      |
| 06-02-93      | 5                              | 65                           | 8.37                      | 8.41                    | 0.04                      |
| 06-18-93      | 100                            | 0                            | 8.46                      | 8.57                    | 0.14                      |
| 07-09-93      | 150                            | 0                            | 8.20                      | 8.25                    | 0.05                      |
| 11-11-93      | 40                             | 80                           | 7.98                      | 7.91                    | 0.07                      |
| 12-10-93      | 20                             | 25                           | 8.62                      | 8.59                    | 0.03                      |
| 01-29-94      | 0                              | 0                            | 8.76                      | 8.76                    | 0.00                      |
| 03-10-94      | 0                              | 0                            | 8.63                      | 8.63                    | 0.00                      |
| 05-03-94      | 1,976                          | 658                          | 8.93                      | 9.15                    | 0.22                      |
| 06-17-94      | 6                              | 565                          | 8.85                      | 8.85                    | 0.00                      |
| 06-21-94      | 1                              | 540                          | 8.50                      | 8.52                    | 0.02                      |
| 06-28-94      | 5                              | 400                          | 8.69                      | 8.71                    | 0.01                      |
| 07-08-94      | 26                             | 500                          | 8.61                      | 8.61                    | 0.00                      |
| 07-14-94      | 0                              | 400                          | 8.73                      | 8.73                    | 0.00                      |
| 07-20-94      | 20                             | 500                          | 8.60                      | 8.62                    | 0.02                      |
| 07-26-94      | 60                             | 560                          | 8.68                      | 8.71                    | 0.03                      |
| 08-02-94      | 21                             | 500                          | 8.46                      | 8.50                    | 0.04                      |
| 08-12-94      | 30                             | 640                          | 7.74                      | 7.79                    | 0.05                      |
| 08-18-94      | 0                              | 550                          | 9.24                      | 9.24                    | 0.00                      |
| 08-25-94      | 0                              | 550                          | 8.78                      | 8.78                    | 0.00                      |
| 08-31-94      | 0                              | 550                          | 8.74                      | 8.74                    | 0.00                      |
| 09-09-94      | 150                            | 375                          | 7.74                      | 7.76                    | 0.02                      |
| 09-15-94      | 0                              | 525                          | 8.93                      | 8.93                    | 0.00                      |
| 09-22-94      | 5                              | 305                          | 8.97                      | 8.99                    | 0.02                      |
| 09-30-94      | 0                              | 420                          | 8.86                      | 8.86                    | 0.00                      |
| 10-07-94      | 0                              | 550                          | 8.74                      | 8.74                    | 0.00                      |
| 10-14-94      | 0                              | 520                          | 8.80                      | 8.80                    | 0.00                      |
| 10-21-94      | 0                              | 520                          | 8.88                      | 8.88                    | 0.00                      |
| 10-28-94      | 0                              | 525                          | 8.90                      | 8.90                    | 0.00                      |
| 11-04-94      | 0                              | 550                          | 8.00                      | 8.00                    | 0.00                      |
| 11-09-94      | 0                              | 520                          | 7.99                      | 7.99                    | 0.00                      |
| 11-18-94      | 80                             | 430                          | 8.05                      | 8.15                    | 0.10                      |
| 11-25-94      | 130                            | 300                          | 8.00                      | 7.99                    | 0.01                      |
| 11-30-94      | 30                             | 260                          | 7.94                      | 7.95                    | 0.01                      |
| 12-09-94      | 30                             | 430                          | 8.03                      | 8.07                    | 0.04                      |
| 12-16-94      | 30                             | 120                          | 7.96                      | 7.99                    | 0.03                      |
| 12-22-94      | 20                             | 500                          | 8.06                      | 8.09                    | 0.03                      |
| 12-29-94      | 80                             | 360                          | 7.71                      | 7.73                    | 0.02                      |

**Passive Product Recovery Observations (RAO-3)**

| Sampling Date | Volume of Product Removed (mL) | Volume of Water Removed (mL) | Depth to Product (ft-bgs) | Depth to Water (ft-bgs) | Thickness of Product (ft) |
|---------------|--------------------------------|------------------------------|---------------------------|-------------------------|---------------------------|
| 01-06-95      | 25                             | 500                          | 7.57                      | 7.60                    | 0.03                      |
| 01-13-95      | 50                             | 70                           | 7.55                      | 7.54                    | 0.01                      |
| 01-20-95      | 5                              | 510                          | 7.53                      | 7.54                    | 0.01                      |
| 01-26-95      | 30                             | 500                          | 7.38                      | 7.41                    | 0.03                      |
| 01-31-95      | 30                             | 320                          | 7.47                      | 7.48                    | 0.01                      |
| 02-09-95      | 20                             | 210                          | 7.63                      | 7.63                    | 0.00                      |
| 02-14-95      | 20                             | 175                          | 7.62                      | 7.64                    | 0.02                      |
| 02-24-95      | 30                             | 310                          | 7.85                      | 7.89                    | 0.04                      |
| 03-03-95      | 20                             | 340                          | 7.75                      | 7.78                    | 0.03                      |
| 03-09-95      | 30                             | 510                          | 7.31                      | 7.34                    | 0.03                      |
| 03-17-95      | 10                             | 510                          | 7.28                      | 7.29                    | 0.01                      |
| 03-24-95      | 15                             | 485                          | 7.23                      | 7.24                    | 0.01                      |
| 03-31-95      | 15                             | 475                          | 7.47                      | 7.48                    | 0.01                      |
| 04-07-95      | 35                             | 285                          | 7.61                      | 7.62                    | 0.01                      |
| 04-14-95      | 20                             | 280                          | 7.68                      | 7.69                    | 0.01                      |
| 04-21-95      | 20                             | 290                          | 7.75                      | 7.73                    | 0.02                      |
| 04-28-95      | 40                             | 420                          | 7.65                      | 7.68                    | 0.03                      |
| 05-06-95      | 20                             | 360                          | 7.70                      | 7.71                    | 0.01                      |
| 05-12-95      | 20                             | 390                          | 7.70                      | 7.70                    | 0.00                      |
| 05-19-95      | 10                             | 370                          | 7.90                      | 7.90                    | 0.00                      |
| 05-26-95      | 10                             | 380                          | 7.80                      | 7.80                    | 0.00                      |
| 06-02-95      | 0                              | 240                          | 7.86                      | 7.86                    | 0.00                      |
| 06-09-95      | 0                              | 330                          | 7.80                      | 7.80                    | 0.00                      |
| 06-16-95      | 0                              | 170                          | 7.87                      | 7.87                    | 0.00                      |
| 06-23-95      | 0                              | 300                          | 7.99                      | 7.99                    | 0.00                      |
| 06-30-95      | 0                              | 300                          | 7.88                      | 7.88                    | 0.00                      |
| 07-07-95      | 0                              | 280                          | 7.82                      | 7.82                    | 0.00                      |
| 07-14-95      | 0                              | 290                          | 7.86                      | 7.86                    | 0.00                      |
| 07-21-95      | 0                              | 540                          | 7.90                      | 7.90                    | 0.00                      |
| 07-28-95      | 0                              | 500                          | 7.92                      | 7.92                    | 0.00                      |
| 08-04-95      | 0                              | 480                          | 7.86                      | 7.86                    | 0.00                      |
| 08-11-95      | 0                              | 530                          | 7.88                      | 7.88                    | 0.00                      |
| 08-18-95      | 0                              | 520                          | 7.86                      | 7.86                    | 0.00                      |
| 08-25-95      | 0                              | 500                          | 7.90                      | 7.90                    | 0.00                      |
| 09-05-95      | 0                              | 310                          | 8.15                      | 8.15                    | 0.00                      |
| 09-12-95      | 0                              | 400                          | 8.10                      | 8.10                    | 0.00                      |
| 09-19-95      | 0                              | 390                          | 8.20                      | 8.20                    | 0.00                      |
| 09-26-95      | 0                              | 380                          | 8.25                      | 8.25                    | 0.00                      |

**Passive Product Recovery Observations (RAO-3)**

| Sampling Date | Volume of Product Removed (mL) | Volume of Water Removed (mL) | Depth to Product (ft-bgs) | Depth to Water (ft-bgs) | Thickness of Product (ft) |
|---------------|--------------------------------|------------------------------|---------------------------|-------------------------|---------------------------|
| 10-03-95      | 0                              | 385                          | 8.15                      | 8.15                    | 0.00                      |
| 10-10-95      | 0                              | 230                          | 8.42                      | 8.42                    | 0.00                      |
| 10-17-95      | 0                              | 240                          | 8.39                      | 8.39                    | 0.00                      |
| 10-24-95      | 0                              | 250                          | 8.40                      | 8.40                    | 0.00                      |
| 10-31-95      | 0                              | 255                          | 8.44                      | 8.44                    | 0.00                      |
| 11-07-95      | 0                              | 260                          | 8.42                      | 8.42                    | 0.00                      |
| 11-14-95      | 0                              | 400                          | 8.43                      | 8.43                    | 0.00                      |
| 11-21-95      | 0                              | 420                          | 8.48                      | 8.48                    | 0.00                      |
| 11-28-95      | 0                              | 480                          | 8.50                      | 8.50                    | 0.00                      |
| 12-05-95      | 0                              | 400                          | 8.55                      | 8.55                    | 0.00                      |
| 12-15-95      | 0                              | 550                          | 8.40                      | 8.40                    | 0.00                      |
| 12-22-95      | 0                              | 490                          | 8.36                      | 8.36                    | 0.00                      |
| 12-29-95      | 0                              | 570                          | 7.85                      | 7.85                    | 0.00                      |
| 01-05-96      | 0                              | 560                          | 7.82                      | 7.82                    | 0.00                      |
| 01-12-96      | 0                              | 480                          | 7.52                      | 7.52                    | 0.00                      |
| 01-19-96      | 0                              | 460                          | 7.54                      | 7.54                    | 0.00                      |
| 01-26-96      | 0                              | 450                          | 7.53                      | 7.53                    | 0.00                      |
| 02-01-96      | 400                            | 1000                         | 7.03                      | 7.12                    | 0.09                      |
| 02-09-96      | 275                            | 480                          | 7.34                      | 7.36                    | 0.02                      |
| 02-16-96      | 75                             | 400                          | 7.35                      | 7.37                    | 0.02                      |
| 02-23-96      | 100                            | 360                          | 7.33                      | 7.36                    | 0.03                      |
| 03-01-96      | 100                            | 350                          | 7.32                      | 7.34                    | 0.02                      |
| 03-08-96      | 90                             | 360                          | 7.34                      | 7.36                    | 0.02                      |
| 03-15-96      | 95                             | 355                          | 7.35                      | 7.37                    | 0.02                      |
| 03-22-96      | 90                             | 360                          | 7.33                      | 7.35                    | 0.02                      |
| 03-29-96      | 80                             | 350                          | 7.34                      | 7.36                    | 0.02                      |
| 04-05-96      | 90                             | 355                          | 7.44                      | 7.47                    | 0.03                      |
| 04-12-96      | 70                             | 360                          | 7.48                      | 7.50                    | 0.02                      |
| 04-19-96      | 75                             | 350                          | 7.58                      | 7.60                    | 0.02                      |
| 04-26-96      | 60                             | 500                          | 7.74                      | 7.75                    | 0.01                      |
| 05-03-96      | 50                             | 460                          | 7.75                      | 7.76                    | 0.01                      |
| 05-10-96      | 0                              | 100                          | 7.76                      | 7.76                    | 0.00                      |
| 05-17-96      | 0                              | 480                          | 7.78                      | 7.78                    | 0.00                      |
| 05-24-96      | 0                              | 490                          | 7.90                      | 7.90                    | 0.00                      |
| 05-31-96      | 10                             | 495                          | 7.60                      | 7.60                    | 0.00                      |
| 06-08-96      | 0                              | 490                          | 7.72                      | 7.72                    | 0.00                      |
| 06-14-96      | 10                             | 490                          | 7.72                      | 7.72                    | 0.00                      |
| 06-21-96      | 0                              | 480                          | 7.74                      | 7.74                    | 0.00                      |



**Passive Product Recovery Observations (RAO-3)**

| Sampling Date | Volume of Product Removed (mL) | Volume of Water Removed (mL) | Depth to Product (ft-bgs) | Depth to Water (ft-bgs) | Thickness of Product (ft) |
|---------------|--------------------------------|------------------------------|---------------------------|-------------------------|---------------------------|
| 11-07-97      | 0                              | 540                          | 8.21                      | 8.21                    | 0.00                      |
| 11-21-97      | 0                              | 550                          | 7.60                      | 7.60                    | 0.00                      |
| 12-05-97      | 0                              | 560                          | 7.22                      | 7.22                    | 0.00                      |
| 12-19-97      | 0                              | 500                          | 7.24                      | 7.24                    | 0.00                      |
| 01-02-98      | 50                             | 520                          | 7.00                      | 7.00                    | 0.00                      |
| 01-16-98      | 40                             | 540                          | 7.00                      | 7.00                    | 0.00                      |
| 01-30-98      | 40                             | 530                          | 7.20                      | 7.20                    | 0.00                      |
| 02-13-98      | 50                             | 500                          | 7.10                      | 7.10                    | 0.00                      |
| 02-27-98      | 220                            | 510                          | 6.99                      | 6.99                    | 0.00                      |
| 03-13-98      | 120                            | 300                          | 6.96                      | 6.96                    | 0.00                      |
| 03-27-98      | 90                             | 350                          | 6.98                      | 6.98                    | 0.00                      |
| 04-10-98      | 50                             | 400                          | 7.20                      | 7.20                    | 0.00                      |
| 04-24-98      | 0                              | 450                          | 7.22                      | 7.22                    | 0.00                      |
| 05-08-98      | 0                              | 460                          | 7.28                      | 7.28                    | 0.00                      |
| 05-22-98      | 0                              | 450                          | 7.40                      | 7.40                    | 0.00                      |
| 06-05-98      | 0                              | 570                          | 7.18                      | 7.18                    | 0.00                      |
| 06-19-98      | 10                             | 500                          | 7.15                      | 7.15                    | 0.00                      |
| 07-05-98      | 5                              | 495                          | 7.18                      | 7.18                    | 0.00                      |
| 07-06-98      | 10                             | 520                          | 7.20                      | 7.20                    | 0.00                      |
| 07-24-98      | 5                              | 495                          | 7.30                      | 7.30                    | 0.00                      |
| 08-07-98      | 0                              | 300                          | 7.40                      | 7.40                    | 0.00                      |
| 08-21-98      | 0                              | 250                          | 7.45                      | 7.45                    | 0.00                      |
| 08-28-98      | 0                              | 510                          | 7.44                      | 7.44                    | 0.00                      |
| 09-04-98      | 0                              | 100                          | 7.46                      | 7.46                    | 0.00                      |
| 09-18-98      | 0                              | 300                          | 7.44                      | 7.44                    | 0.00                      |
| 10-02-98      | 0                              | 370                          | 7.75                      | 7.75                    | 0.00                      |
| 10-16-98      | 0                              | 220                          | 7.40                      | 7.40                    | 0.00                      |
| 10-30-98      | 0                              | 240                          | 7.60                      | 7.60                    | 0.00                      |
| 11-13-98      | 0                              | 250                          | 7.62                      | 7.62                    | 0.00                      |
| 11-27-98      | 0                              | 260                          | 7.61                      | 7.61                    | 0.00                      |
| 12-11-98      | 0                              | 210                          | 7.90                      | 7.90                    | 0.00                      |
| 12-28-98      | 0                              | 100                          | 8.16                      | 8.16                    | 0.00                      |
| 01-11-99      | 0                              | 100                          | 8.36                      | 8.36                    | 0.00                      |
| 07-30-99      | 0                              | 500                          | 7.75                      | 7.75                    | 0.00                      |
| 08-13-99      | 0                              | 475                          | 7.78                      | 7.78                    | 0.00                      |
| 08-27-99      | 0                              | 490                          | 7.77                      | 7.77                    | 0.00                      |
| 09-13-99      | 0                              | 500                          | 8.00                      | 8.00                    | 0.00                      |
| 09-30-99      | 0                              | 480                          | 8.10                      | 8.10                    | 0.00                      |
| 10-15-99      | 0                              | 500                          | 8.30                      | 8.30                    | 0.00                      |
| 10-29-99      | 0                              | 470                          | 8.20                      | 8.20                    | 0.00                      |
| 11-12-99      | 0                              | 480                          | 8.16                      | 8.16                    | 0.00                      |

**Passive Product Recovery Observations (RAO-3)**

| Sampling Date | Volume of Product Removed (mL) | Volume of Water Removed (mL) | Depth to Product (ft-bgs) | Depth to Water (ft-bgs) | Thickness of Product (ft) |
|---------------|--------------------------------|------------------------------|---------------------------|-------------------------|---------------------------|
| 11-26-99      | 0                              | 500                          | 8.12                      | 8.12                    | 0.00                      |
| 12-10-99      | 0                              | 470                          | 8.18                      | 8.18                    | 0.00                      |
| 12-23-99      | 0                              | 480                          | 8.14                      | 8.14                    | 0.00                      |
| 01-06-00      | 0                              | 500                          | 8.12                      | 8.12                    | 0.00                      |
| 01-20-00      | 0                              | 480                          | 8.20                      | 8.20                    | 0.00                      |
| 02-03-00      | 0                              | 400                          | 7.60                      | 7.60                    | 0.00                      |
| 02-23-00      | 0                              | 500                          | 7.03                      | 7.03                    | 0.00                      |
| 03-10-00      | 10                             | 500                          | 7.08                      | 7.08                    | 0.00                      |
| 03-27-00      | 20                             | 510                          | 7.75                      | 7.75                    | 0.00                      |
| 03-10-00      | 25                             | 420                          | 7.45                      | 7.45                    | 0.00                      |
| 03-24-00      | 20                             | 500                          | 7.75                      | 7.75                    | 0.00                      |
| 04-03-00      | 15                             | 480                          | 7.60                      | 7.60                    | 0.00                      |
| 04-17-00      | 20                             | 410                          | 8.00                      | 8.00                    | 0.00                      |
| 05-01-00      | 15                             | 380                          | 7.40                      | 7.40                    | 0.00                      |
| 05-15-00      | 5                              | 275                          | 7.47                      | 7.47                    | 0.00                      |
| 05-30-00      | 0                              | 320                          | 7.45                      | 7.45                    | 0.00                      |
| 06-12-00      | 0                              | 110                          | 7.58                      | 7.58                    | 0.00                      |
| 06-26-00      | 0                              | 90                           | 7.56                      | 7.56                    | 0.00                      |
| 07-16-00      | 0                              | 240                          | 7.38                      | 7.38                    | 0.00                      |
| 07-24-00      | 0                              | 360                          | 7.58                      | 7.58                    | 0.00                      |
| 08-07-00      | 0                              | 425                          | 7.80                      | 7.80                    | 0.00                      |
| 08-21-00      | 0                              | 400                          | 7.60                      | 7.60                    | 0.00                      |
| 09-12-00      | 0                              | 500                          | 7.82                      | 7.82                    | 0.00                      |
| 09-25-00      | 0                              | 530                          | 7.78                      | 7.78                    | 0.00                      |
| 10-10-00      | 0                              | 560                          | 7.75                      | 7.75                    | 0.00                      |
| 10-23-00      | 0                              | 500                          | 7.62                      | 7.62                    | 0.00                      |
| 11-06-00      | 0                              | 520                          | 7.74                      | 7.74                    | 0.00                      |
| 11-20-00      | 0                              | 588                          | 7.65                      | 7.65                    | 0.00                      |
| 12-04-00      | 0                              | 320                          | 7.80                      | 7.80                    | 0.00                      |
| 12-18-00      | 0                              | 420                          | 7.86                      | 7.86                    | 0.00                      |
| 01-02-01      | 0                              | 400                          | 7.75                      | 7.75                    | 0.00                      |
| 01-15-01      | 0                              | 440                          | 7.78                      | 7.78                    | 0.00                      |
| 02-06-01      | 0                              | 400                          | 7.58                      | 7.58                    | 0.00                      |
| 02-20-01      | 0                              | 510                          | 7.76                      | 7.76                    | 0.00                      |
| 03-05-01      | 0                              | 500                          | 7.84                      | 7.84                    | 0.00                      |
| 03-19-01      | 0                              | 500                          | 7.68                      | 7.68                    | 0.00                      |
| Total to Date | 9,507                          |                              |                           |                         |                           |



Augmented Liquid Extraction (RAO-3)

| Sampling Date | Volume of Product Removed (gal) | Volume of Product/Water Removed (gal) |
|---------------|---------------------------------|---------------------------------------|
| 08-18-97      | 10                              | 290                                   |
| 04-24-98      | 5                               | 360                                   |