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**Quarterly Monitoring Report for  
April 1 through June 30, 1993  
Former Bashland Property  
Emeryville, California**

**July 30, 1993  
1649.10**

**Prepared for  
Catellus Development Corporation  
201 Mission Street  
San Francisco, California**



**LEVINE·FRICKE**



# LEVINE•FRICKE

ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

July 30, 1993

LF 1649.10

Ms. Susan Hugo  
Alameda County Health Care Services Agency  
80 Swan Way, Suite 200  
Oakland, California 94621

Subject: Quarterly Monitoring Report for April 1 through  
June 30, 1993, Former Bashland Property, Yerba Buena  
Project Site, Emeryville, California

Dear Ms. Hugo:

Enclosed is the quarterly monitoring report for April 1  
through June 30, 1993, for the former Bashland property,  
located in Emeryville, California.

This report has been prepared on behalf of Catellus  
Development Corporation for the redevelopment project at the  
Yerba Buena/East Baybridge Project Site, in accordance with  
Levine-Fricke's work plan dated December 15, 1992. The  
enclosed report presents the results for ground-water  
monitoring activities conducted in May 1993.

Please call me if you have any questions or comments regarding  
this report.

Sincerely,

Jenifer Beatty  
Project Hydrogeologist

cc: Lester Feldman, RWQCB  
Kimberly Brandt, Catellus  
Pat Cashman, Catellus

1900 Powell Street, 12th Floor  
Emeryville, California 94608  
(510) 652-4500  
Fax (510) 652-2246

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CERTIFICATION

All hydrogeologic and geologic information, conclusions, and recommendations presented in this report have been prepared under the supervision of and reviewed by a Levine·Fricke California Registered Geologist.



Andrew L. Wright  
Senior Associate Geologist  
California Registered Geologist (4592)

7/30/93  
Date

July 30, 1993

LF 1649.10

QUARTERLY MONITORING REPORT FOR  
APRIL 1 THROUGH JUNE 30, 1993  
FORMER BASHLAND PROPERTY, EMERYVILLE, CALIFORNIA

## 1.0 INTRODUCTION

This report presents results of quarterly ground-water monitoring activities conducted during the period April 1 to June 30, 1993, for the former Bashland property ("Bashland") located at 4015 Hollis Street in Emeryville, California (Figure 1). Levine·Fricke, Inc. ("Levine·Fricke") conducted this work on behalf of Catellus Development Corporation ("Catellus") in accordance with the work plan dated December 15, 1992 (Levine·Fricke 1992), and verbally approved by Ms. Susan Hugo of the Alameda County Health Care Services Agency (ACHA) in January 1993.

## 2.0 BACKGROUND AND PREVIOUS INVESTIGATIONS

Between March 23 and May 7, 1992, Levine·Fricke supervised the removal of one 1,200-gallon oil and two 12,000-gallon fuel underground storage tanks (USTs) from Bashland by Trumpp Brothers, Inc., of San Jose, California, under permits from the City of Emeryville (permit number B-4278-492), the Emeryville Fire Department (EFD), and the ACHA. Ms. Susan Hugo, Senior Hazardous Materials Specialist of the ACHA, Mr. Ron Owcarz, Hazardous Specialist of the ACHA, and a representative of the EFD were on site to observe tank removal and soil sampling activities. Holes were observed in two of the three USTs removed.

Chemical analysis results for soil samples collected from the excavation sidewalls indicated low concentrations (below detection limits to 2 parts per million [ppm]) of petroleum product or associated constituents. Total petroleum hydrocarbons (TPH) as oil (TPHo) were detected in one of the floor samples at a concentration of 1,500 ppm; however, TPHo concentrations were below laboratory detection limits in the other samples. On the basis of these results, the excavation was backfilled using 3/4-inch drain rock and clean imported fill material on May 6 and 7, 1992, upon approval of the ACHA.

Following installation of monitoring well LF-31 downgradient from and within 10 feet of the former USTs (Figure 2) in February 1993 (Levine·Fricke 1992 and 1993), a quarterly

ground-water monitoring program was implemented at Bashland to assess whether a possible release of petroleum hydrocarbons has affected shallow ground water in the vicinity of the former UST locations. As part of this analysis program, samples collected from well LF-31 will be analyzed on a semiannual basis for volatile organic compounds (VOC) using EPA Method 8010 to monitor possible concentrations of VOCs in shallow ground water that may have migrated on site from known off-site VOC sources located north of Bashland (i.e., the Electro-Coatings, Inc., and/or Del Monte sites; Figure 1).

### 3.0 QUARTERLY MONITORING ACTIVITIES CONDUCTED DURING THE PERIOD FROM APRIL 1 THROUGH JUNE 30, 1993

The activities conducted and the results obtained for April 1 through June 30, 1993, are presented below.

#### 3.1 Water-Level Measurement

Depth to water was measured in well LF-31 on May 24, 1993, in conjunction with water-level measurements for all existing wells at the Yerba Buena Project Site. Depth to water was measured using an electric water-level sounding probe to the nearest 0.01 foot, relative to the top of the PVC well casing. The depth to water measured in well LF-31 on May 24, 1993, was 6.33 feet bgs. This represents a decrease in ground-water elevations of 1.48 feet relative to February 1993 data.

#### 3.2 Sampling

Ground-water samples were collected for chemical analyses from well LF-31 on May 26, 1993. Before ground-water samples were collected from the wells, 4.5 well volumes of water were purged from the well using a centrifugal pump. Parameters such as pH, temperature, specific conductance, quantity, and clarity of water withdrawn were measured and recorded during this process. Water-quality sampling sheets are included in Appendix A.

Ground-water samples were collected immediately following purging of the well using a clean Teflon bailer. Samples collected for analysis of VOCs were placed into laboratory-supplied, 40-milliliter glass vials preserved with hydrochloric acid. The glass vials were filled to capacity, capped, and checked for trapped air bubbles. Samples collected for TPH as diesel (TPHd) and total recoverable petroleum hydrocarbon (TRPH) analyses were poured into

laboratory-supplied 1-liter amber bottles. Samples were placed in an ice-chilled cooler immediately after collection for transportation under chain-of-custody protocols to a state-certified laboratory for chemical analysis.

### 3.3 Laboratory Analysis

Ground-water samples were submitted to Anametrix Inc., of San Jose, California, a state-certified laboratory, and analyzed using EPA Method 3510 GCFID for TPHd, Standard Method 5520BF for TRPH, and EPA Method 8010 for VOCs.

### **4.0 GROUND-WATER ELEVATIONS**

Ground-water elevation measurements for Bashland and vicinity are included on Figure 3, which presents ground-water elevation data and ground-water elevation contours for the entire Yerba Buena Project Site. Depth-to-water measurements collected on May 24, 1993, indicate that shallow ground-water flow beneath Bashland is to the southwest, with an average hydraulic gradient of approximately 0.009 ft/ft. These results are consistent with ground-water flow directions previously reported for this area of Bashland.

### **5.0 ANALYTICAL RESULTS**

A summary of analytical results is presented in Table 1. Results from the ground-water sample collected from well LF-31 indicated that TPHd was detected at concentrations of 0.20 ppm and 0.31 ppm (duplicate). TRPH was not detected above the laboratory detection limit of 5 ppm.

Cis-1,2-dichloroethene (1,2-DCE) and trichloroethene (TCE) were detected at concentrations of 0.004 ppm (duplicate) and 0.020 ppm, respectively.

Methylene chloride (a common laboratory contaminant) was detected in duplicate sample LF-31 at a concentration of 0.0034 ppm. However, the laboratory QA/QC summary indicates that these concentrations are within normal laboratory background levels. Laboratory certificates for ground-water samples are presented in Appendix B.



**6.0 CONCLUSIONS AND RECOMMENDATIONS**

Ground-water samples were collected in May 1993 from recently installed monitoring well LF-31 to monitor concentrations of TPH and VOCs in shallow ground water. Well LF-31 is located within 10 feet downgradient from the former UST locations at Bashland.

**6.1 TPH**

Analytical results for ground-water samples collected from well LF-31 indicate that shallow ground water has not been affected by a possible release of petroleum hydrocarbons, with the exception of TPHd, which was detected at a concentration [REDACTED] in the primary and duplicate samples, respectively. TPHd was not detected in samples collected in February 1993. Well LF-31 will continue to be monitored on a quarterly basis to assess the potential future effects on shallow ground water at Bashland from a possible release of petroleum hydrocarbons.

**6.2 VOCs**

Analytical results indicate low concentrations of VOCs in shallow ground water ([REDACTED]) that likely have migrated on site from an off-site VOC source located north of the Bashland property boundary. It should be noted that 0.034 mg of TCE was detected in ground-water samples collected from monitoring well [REDACTED] (Figure 2), formerly located approximately 40 feet northeast (upgradient) of well LF-31, during the Phase I Investigation in February 1990. No on-site source for VOCs was identified during the background and regulatory literature review conducted at the initiation of the Phase I investigation in 1989 or during removal of the USTs, oil/water separator, or hydraulic lifts formerly located at Bashland.

Possible sources for VOCs detected in shallow ground water in the vicinity of well LF-31 and other Area C wells (LF-10 and LF-11; Figure 3) include the ECI [REDACTED] Number 35 West Parcel site, located at [REDACTED] Emeryville, California. TCE has been detected in ground water at the ECI site since 1985. In November 1991, consultants working on behalf of ECI reported concentration [REDACTED] (American Environmental Management Corporation 1992). TCE was detected in monitoring wells located at the Del Monte site at concentrations up to [REDACTED]. It is our understanding that a ground-water extraction system

## LEVINE·FRICKE

was installed at the Del Monte site in late 1992 or early 1993. Levine-Fricke will continue to monitor the progress of investigations conducted at these sites. In addition, ground-water samples collected from well LF-31 will be analyzed for VOCs using EPA Method 8010 on a semiannual basis.

**REFERENCES**

American Environmental Management Corporation. 1992. Ground Water Monitoring Report for Electro-Coatings, Inc., Emeryville, California. January 27.

CH2M Hill. 1990. Quarterly Monitoring Data for Del Monte's Plant 35 West Parcel, Removed Fuel Tanks Area at 4202 Hollis Street, Emeryville, California.

Levine·Fricke, Inc. 1992. Work Plan to Install One Ground-Water Monitoring Well and Conduct Quarterly Monitoring, Bashland Property, Emeryville, California. December 15.

Levine·Fricke, Inc. 1993. Combined Soil and Ground-Water Investigation Report and Quarterly Monitoring Report for the Period from January 1 through March 31, 1993, Former Bashland Property, Emeryville, California. April 5.

TABLE 1

CHEMICAL ANALYSES RESULTS FOR MONITORING WELL LF-31  
FORMER BASHLAND COMPANY PROPERTY  
(results in parts per million [ppm])

| Date<br>Sampled | TPH<br>as |        | TPH<br>as |         |         |              | Total   |       | TCE    | 1,2-DCE |
|-----------------|-----------|--------|-----------|---------|---------|--------------|---------|-------|--------|---------|
|                 | TRPH      | Diesel | Gasoline  | Benzene | Toluene | Ethylbenzene | Xylenes |       |        |         |
| 2/12/93*        | <5        | <0.05  | <0.05     | <0.0005 | <0.0005 | <0.0005      | <0.0005 | NA    | NA     |         |
| 5/26/93         | <5        | 200    | NA        | NA      | NA      | NA           | NA      | 0.020 | 0.0039 |         |
| duplicate       | <5        | 310    | NA        | NA      | NA      | NA           | NA      | 0.020 | 0.0034 |         |

## Notes:

\* Ground-water samples also analyzed for cadmium, chromium, nickel, lead, and zinc, and semivolatile organic compounds using EPA Method 8270. None of these compounds were detected above laboratory detection limits.

TRPH - Total recoverable petroleum hydrocarbons as oil and grease (Standard Methods 5520BF)

TCE - Trichloroethene (EPA Method 8010)

1,2-DCE - 1,2-dichloroethene (EPA Method 8010)

NA - Not analyzed



MAP SOURCE:  
 Thomas Bros. Map  
 Alameda and Contra Costa Counties  
 EDITION 1992

**Figure 1: SITE LOCATION MAP**  
**BASHLAND PROPERTY SITE**

Project No. 1649.10

JJB28JUL93@RYL

**LEVINE•FRICKE**  
 ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

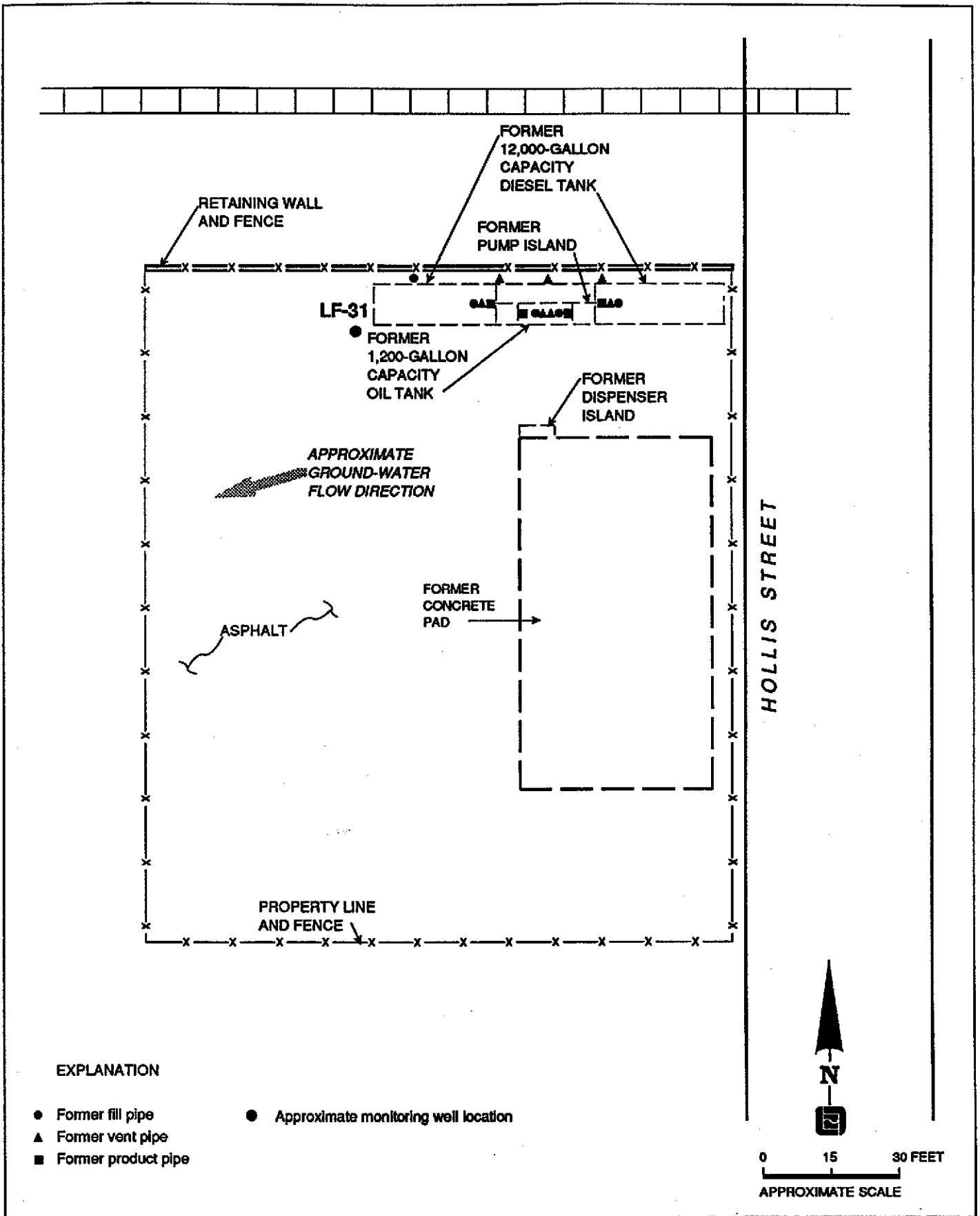


Figure 2: SITE PLAN SHOWING MONITORING WELL LF-31

# WATER-QUALITY SAMPLING INFORMATION

Project Name YERBA BUENA Project No. 1649.0210  
 Date 5/26/93 Sample No. LF-31  
 Samplers Name NEM, SCH, BKS LF-31  
 Sampling Location LF-31  
 Sampling Method CENTRIFUGAL PUMP / TEFLON BALLER  
 Analyses Requested TPH(A) / EPA Method 6520 BE / 8010  
 Number and Types of Sample Bottles used 3 UOA / 4 Glass Jars  
 Method of Shipment COURIER BITUM

|        |
|--------|
| 20.00  |
| 6.18   |
| 13.82  |
| X.65   |
| 6910   |
| 82920  |
| 8.9830 |

| GROUND WATER                                | SURFACE WATER               |
|---|-----------------------------|
| Well No. <u>LF-31</u>                       | Stream Width _____          |
| Well Diameter (in.) <u>4"</u>               | Stream Depth _____          |
| Depth to Water, Static (ft) <u>6.18</u>     | Stream Velocity _____       |
| Water in Well Box <u>NO</u>                 | Rained recently? _____      |
| Well Depth (ft) <u>20.00</u>                | Other _____                 |
| Height of Water Column in Well <u>13.82</u> | 2-inch casing = 0.16 gal/ft |
| Water Volume in Well <u>8.9830 ~ 9.0</u>    | 4-inch casing = 0.65 gal/ft |
|   | 5-inch casing = 1.02 gal/ft |
|   | 6-inch casing = 1.47 gal/ft |

LOCATION MAP

| TIME | DEPTH TO WATER (feet) | VOLUME WITHDRAWN (gallons) | TEMP (deg. C) | pH (S.U.) | COND (mhos/cm) | OTHER |  | REMARKS         |
|------|-----------------------|----------------------------|---------------|-----------|----------------|-------|--|-----------------|
|      |                       |                            |               |           |                |       |  |                 |
| 8:28 |                       |                            |               |           |                |       |  | START PUMP      |
| 8:29 |                       | 9.0                        | 18.2          | 6.82      | 1334           |       |  | SLIGHTLY TURBID |
| 8:31 |                       | 18.0                       | 18.1          | 6.78      | 1313           |       |  | SLIGHTLY TURBID |
| 8:32 |                       | 29.0                       | 18.3          | 6.91      | 1303           |       |  | TURBID          |
| 8:35 |                       | 30.                        |               |           |                |       |  | SHUT OFF PUMP   |
| 8:44 | 13.55                 |                            |               |           |                |       |  | START PUMP      |
| 8:47 |                       | 39                         | 18.1          | 6.94      | 1265           |       |  | TURBID          |
| 8:47 |                       |                            |               |           |                |       |  | STOP PUMP       |
| 8:50 |                       |                            |               |           |                |       |  | SAMPLE - LF-31  |
| 9:50 |                       |                            |               |           |                |       |  | SAMPLE - LF-131 |
| 9:04 | 11.41                 |                            |               |           |                |       |  |                 |

Suggested Method for Purging Well CENTRIFUGAL PUMP



# Inchcape Testing Services

## Anametrix Laboratories

1961 Concourse Drive #E  
 San Jose, CA 95131  
 Tel: 408-432-8192  
 Fax: 408-432-8198

MS. JENIFER BEATTY  
 LEVINE-FRICKE  
 1900 POWELL STREET 12TH FLOOR  
 EMERYVILLE, CA 94608

Workorder # : 9305285  
 Date Received : 05/27/93  
 Project ID : 1649.10  
 Purchase Order: N/A


The following samples were received at Anametrix, Inc. for analysis :

| ANAMETRIX ID | CLIENT SAMPLE ID |
|--------------|------------------|
| 9305285- 1   | LF-31            |
| 9305285- 2   | LF-131           |

This report consists of 17 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

  
 Sarah Schoen, Ph.D.  
 Laboratory Director

6-11-93  
 Date

COPY

RECEIVED  
 JUN 14 1993



REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MS. JENIFER BEATTY  
LEVINE-FRICKE  
1900 POWELL STREET 12TH FLOOR  
EMERYVILLE, CA 94608

Workorder # : 9305285  
Date Received : 05/27/93  
Project ID : 1649.10  
Purchase Order: N/A  
Department : GC  
Sub-Department: VOA

SAMPLE INFORMATION:

| ANAMETRIX<br>SAMPLE ID | CLIENT<br>SAMPLE ID | MATRIX | DATE<br>SAMPLED | METHOD |
|------------------------|---------------------|--------|-----------------|--------|
| 9305285- 1             | LF-31               | WATER  | 05/26/93        | 8010   |
| 9305285- 2             | LF-131              | WATER  | 05/26/93        | 8010   |

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MS. JENIFER BEATTY  
LEVINE-FRICKE  
1900 POWELL STREET 12TH FLOOR  
EMERYVILLE, CA 94608

Workorder # : 9305285  
Date Received : 05/27/93  
Project ID : 1649.10  
Purchase Order: N/A  
Department : GC  
Sub-Department: VOA

QA/QC SUMMARY :

- In the matrix spike duplicate of sample LF-131, the percent recoveries of 1,1-Dichloroethane, 1,3-Dichlorobenzene, and 1,2-Dichlorobenzene are outside of Anamatrix control limits for EPA Method 8010. However, this is not indicative of instrument calibration problem. The reason is the recoveries of these compounds in the laboratory control sample are within QA control limits for EPA Method 8010. Therefore, the 8010 results reported for samples LF-31 and LF-131 are not affected.
- The amount of methylene chloride reported in sample LF-131 is within normal laboratory background levels.

Corinne Khan  
Department Supervisor

7/16/93  
Date

M. Harrelin 7/16/93  
Chemist Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010  
 ANAMETRIX, INC. (408)432-8192

Project ID : 1649.10  
 Sample ID : LF-31  
 Matrix : WATER  
 Date Sampled : 5/26/93  
 Date Analyzed : 6/ 2/93  
 Instrument ID : HP24

Anamatrix ID : 9305285-01  
 Analyst : TM  
 Supervisor : CP  
 Dilution Factor : 1.0  
 Conc. Units : ug/L

| CAS No.    | COMPOUND NAME             | REPORTING LIMIT | AMOUNT DETECTED | Q |
|------------|---------------------------|-----------------|-----------------|---|
| 75-71-8    | Dichlorodifluoromethane   | 1.0             | ND              | U |
| 74-87-3    | Chloromethane             | 1.0             | ND              | U |
| 75-01-4    | Vinyl chloride            | .50             | ND              | U |
| 74-83-9    | Bromomethane              | .50             | ND              | U |
| 75-00-3    | Chloroethane              | .50             | ND              | U |
| 75-69-4    | Trichlorofluoromethane    | .50             | ND              | U |
| 76-13-1    | Trichlorotrifluoroethane  | .50             | ND              | U |
| 75-35-4    | 1,1-Dichloroethene        | .50             | ND              | U |
| 75-09-2    | Methylene chloride        | 1.0             | ND              | U |
| 156-60-5   | trans-1,2-Dichloroethene  | .50             | ND              | U |
| 75-34-3    | 1,1-Dichloroethane        | .50             | ND              | U |
| 156-59-2   | cis-1,2-Dichloroethene    | .50             | 3.9             | U |
| 67-66-3    | Chloroform                | .50             | ND              | U |
| 71-55-6    | 1,1,1-Trichloroethane     | .50             | ND              | U |
| 56-23-5    | Carbon tetrachloride      | .50             | ND              | U |
| 107-06-2   | 1,2-Dichloroethane        | .50             | ND              | U |
| 79-01-6    | Trichloroethene           | .50             | 20.             | U |
| 78-87-5    | 1,2-Dichloropropane       | .50             | ND              | U |
| 75-27-4    | Bromodichloromethane      | .50             | ND              | U |
| 110-75-8   | 2-Chloroethylvinylether   | 1.0             | ND              | U |
| 10061-01-5 | cis-1,3-Dichloropropene   | .50             | ND              | U |
| 10061-02-6 | trans-1,3-Dichloropropene | .50             | ND              | U |
| 79-00-5    | 1,1,2-Trichloroethane     | .50             | ND              | U |
| 127-18-4   | Tetrachloroethene         | .50             | ND              | U |
| 124-48-1   | Dibromochloromethane      | .50             | ND              | U |
| 108-90-7   | Chlorobenzene             | .50             | ND              | U |
| 75-25-2    | Bromoform                 | .50             | ND              | U |
| 79-34-5    | 1,1,2,2-Tetrachloroethane | .50             | ND              | U |
| 541-73-1   | 1,3-Dichlorobenzene       | 1.0             | ND              | U |
| 106-46-7   | 1,4-Dichlorobenzene       | 1.0             | ND              | U |
| 95-50-1    | 1,2-Dichlorobenzene       | 1.0             | ND              | U |

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010  
 ANAMETRIX, INC. (408)432-8192

Project ID : 1649.10  
 Sample ID : LF-131  
 Matrix : WATER  
 Date Sampled : 5/26/93  
 Date Analyzed : 6/ 2/93  
 Instrument ID : HP24

Anamatrix ID : 9305285-02  
 Analyst : JM  
 Supervisor : CP  
 Dilution Factor : 1.0  
 Conc. Units : ug/L

| CAS No.    | COMPOUND NAME             | REPORTING LIMIT | AMOUNT DETECTED | Q |
|------------|---------------------------|-----------------|-----------------|---|
| 75-71-8    | Dichlorodifluoromethane   | 1.0             | ND              | U |
| 74-87-3    | Chloromethane             | 1.0             | ND              | U |
| 75-01-4    | Vinyl chloride            | .50             | ND              | U |
| 74-83-9    | Bromomethane              | .50             | ND              | U |
| 75-00-3    | Chloroethane              | .50             | ND              | U |
| 75-69-4    | Trichlorofluoromethane    | .50             | ND              | U |
| 76-13-1    | Trichlorotrifluoroethane  | .50             | ND              | U |
| 75-35-4    | 1,1-Dichloroethene        | .50             | ND              | U |
| 75-09-2    | Methylene chloride        | 1.0             | 3.4             | U |
| 156-60-5   | trans-1,2-Dichloroethene  | .50             | ND              | U |
| 75-34-3    | 1,1-Dichloroethane        | .50             | ND              | U |
| 156-59-2   | cis-1,2-Dichloroethene    | .50             | 4.0             | U |
| 67-66-3    | Chloroform                | .50             | ND              | U |
| 71-55-6    | 1,1,1-Trichloroethane     | .50             | ND              | U |
| 56-23-5    | Carbon tetrachloride      | .50             | ND              | U |
| 107-06-2   | 1,2-Dichloroethane        | .50             | ND              | U |
| 79-01-6    | Trichloroethene           | .50             | 20.             | U |
| 78-87-5    | 1,2-Dichloropropane       | .50             | ND              | U |
| 75-27-4    | Bromodichloromethane      | .50             | ND              | U |
| 110-75-8   | 2-Chloroethylvinylether   | 1.0             | ND              | U |
| 10061-01-5 | cis-1,3-Dichloropropene   | .50             | ND              | U |
| 10061-02-6 | trans-1,3-Dichloropropene | .50             | ND              | U |
| 79-00-5    | 1,1,2-Trichloroethane     | .50             | ND              | U |
| 127-18-4   | Tetrachloroethene         | .50             | ND              | U |
| 124-48-1   | Dibromochloromethane      | .50             | ND              | U |
| 108-90-7   | Chlorobenzene             | .50             | ND              | U |
| 75-25-2    | Bromoform                 | .50             | ND              | U |
| 79-34-5    | 1,1,2,2-Tetrachloroethane | .50             | ND              | U |
| 541-73-1   | 1,3-Dichlorobenzene       | 1.0             | ND              | U |
| 106-46-7   | 1,4-Dichlorobenzene       | 1.0             | ND              | U |
| 95-50-1    | 1,2-Dichlorobenzene       | 1.0             | ND              | U |

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010  
 ANAMETRIX, INC. (408)432-8192

Project ID : 1649.1  
 Sample ID : BLK602  
 Matrix : WATER  
 Date Sampled : 0/ 0/ 0  
 Date Analyzed : 6/ 2/93  
 Instrument ID : HP24

Anamatrix ID : 24B0602H01  
 Analyst : TM  
 Supervisor : CP  
 Dilution Factor : 1.0  
 Conc. Units : ug/L

| CAS No.    | COMPOUND NAME             | REPORTING LIMIT | AMOUNT DETECTED | Q |
|------------|---------------------------|-----------------|-----------------|---|
| 75-71-8    | Dichlorodifluoromethane   | 1.0             | ND              | U |
| 74-87-3    | Chloromethane             | 1.0             | ND              | U |
| 75-01-4    | Vinyl chloride            | .50             | ND              | U |
| 74-83-9    | Bromomethane              | .50             | ND              | U |
| 75-00-3    | Chloroethane              | .50             | ND              | U |
| 75-69-4    | Trichlorofluoromethane    | .50             | ND              | U |
| 76-13-1    | Trichlorotrifluoroethane  | .50             | ND              | U |
| 75-35-4    | 1,1-Dichloroethene        | .50             | ND              | U |
| 75-09-2    | Methylene chloride        | 1.0             | ND              | U |
| 156-60-5   | trans-1,2-Dichloroethene  | .50             | ND              | U |
| 75-34-3    | 1,1-Dichloroethane        | .50             | ND              | U |
| 156-59-2   | cis-1,2-Dichloroethene    | .50             | ND              | U |
| 67-66-3    | Chloroform                | .50             | ND              | U |
| 71-55-6    | 1,1,1-Trichloroethane     | .50             | ND              | U |
| 56-23-5    | Carbon tetrachloride      | .50             | ND              | U |
| 107-06-2   | 1,2-Dichloroethane        | .50             | ND              | U |
| 79-01-6    | Trichloroethene           | .50             | ND              | U |
| 78-87-5    | 1,2-Dichloropropane       | .50             | ND              | U |
| 75-27-4    | Bromodichloromethane      | .50             | ND              | U |
| 110-75-8   | 2-Chloroethylvinylether   | 1.0             | ND              | U |
| 10061-01-5 | cis-1,3-Dichloropropene   | .50             | ND              | U |
| 10061-02-6 | trans-1,3-Dichloropropene | .50             | ND              | U |
| 79-00-5    | 1,1,2-Trichloroethane     | .50             | ND              | U |
| 127-18-4   | Tetrachloroethene         | .50             | ND              | U |
| 124-48-1   | Dibromochloromethane      | .50             | ND              | U |
| 108-90-7   | Chlorobenzene             | .50             | ND              | U |
| 75-25-2    | Bromoform                 | .50             | ND              | U |
| 79-34-5    | 1,1,2,2-Tetrachloroethane | .50             | ND              | U |
| 541-73-1   | 1,3-Dichlorobenzene       | 1.0             | ND              | U |
| 106-46-7   | 1,4-Dichlorobenzene       | 1.0             | ND              | U |
| 95-50-1    | 1,2-Dichlorobenzene       | 1.0             | ND              | U |

SURROGATE RECOVERY SUMMARY -- EPA METHOD 8010  
 ANAMETRIX, INC. (408)432-8192

Project ID : 1649.10  
 Matrix : LIQUID

Anamatrix ID : 9305285  
 Analyst : <sup>TM</sup>  
 Supervisor : CP

|    | SAMPLE ID | SU1 | SU2 | SU3 |
|----|-----------|-----|-----|-----|
| 1  | BLK602    | 76  |     |     |
| 2  | LF-131    | 113 |     |     |
| 3  | LF-31     | 107 |     |     |
| 4  | LF-13MS   | 80  |     |     |
| 5  | LF-13MSD  | 106 |     |     |
| 6  |           |     |     |     |
| 7  |           |     |     |     |
| 8  |           |     |     |     |
| 9  |           |     |     |     |
| 10 |           |     |     |     |
| 11 |           |     |     |     |
| 12 |           |     |     |     |
| 13 |           |     |     |     |
| 14 |           |     |     |     |
| 15 |           |     |     |     |
| 16 |           |     |     |     |
| 17 |           |     |     |     |
| 18 |           |     |     |     |
| 19 |           |     |     |     |
| 20 |           |     |     |     |
| 21 |           |     |     |     |
| 22 |           |     |     |     |
| 23 |           |     |     |     |
| 24 |           |     |     |     |
| 25 |           |     |     |     |
| 26 |           |     |     |     |
| 27 |           |     |     |     |
| 28 |           |     |     |     |
| 29 |           |     |     |     |
| 30 |           |     |     |     |

QC LIMITS

SU1 = Chlorofluorobenzene (51-136)

\* Values outside of Anamatrix QC limits

MATRIX SPIKE RECOVERY FORM -- EPA METHOD 8010  
ANAMETRIX, INC. (408)432-8192

Project ID : 1649.10  
Sample ID : LF-131  
Matrix : WATER  
Date Sampled : 5/26/93  
Date Analyzed : 6/ 2/93  
Instrument ID : HP24

Anamatrix ID : 9305285-02  
Analyst : JM  
Supervisor : CP

| COMPOUND                | SPIKE ADDED (ug/L ) | SAMPLE CONCENTRATION (ug/L ) | MS CONCENTRATION (ug/L ) | MS % REC | %REC LIMITS |
|-------------------------|---------------------|------------------------------|--------------------------|----------|-------------|
| Trichlorotrifluoroethan | 10.0                | .0                           | 10.9                     | 109      | 28-127      |
| 1,1-Dichloroethene      | 10.0                | .0                           | 10.3                     | 103      | 47-119      |
| trans-1,2-Dichloroethen | 10.0                | .0                           | 11.0                     | 110      | 46-112      |
| 1,1-Dichloroethane      | 10.0                | .0                           | 12.1                     | 121      | 57-124      |
| cis-1,2-Dichloroethene  | 10.0                | 4.0                          | 13.4                     | 94       | 70-139      |
| 1,1,1-Trichloroethane   | 10.0                | .0                           | 10.8                     | 108      | 57-125      |
| Trichloroethene         | 10.0                | 20.2                         | 28.5                     | 83       | 61-133      |
| Tetrachloroethene       | 10.0                | .0                           | 10.8                     | 108      | 61-132      |
| Chlorobenzene           | 10.0                | .0                           | 10.9                     | 109      | 81-120      |
| 1,3-Dichlorobenzene     | 10.0                | .0                           | 11.3                     | 113      | 56-113      |
| 1,4-Dichlorobenzene     | 10.0                | .0                           | 11.2                     | 112      | 62-119      |
| 1,2-Dichlorobenzene     | 10.0                | .0                           | 11.2                     | 112      | 69-116      |

| COMPOUND                | SPIKE ADDED (ug/L ) | MSD CONCENTRATION (ug/L ) | MSD % REC | % RPD | RPD LIMITS | %REC LIMITS |
|-------------------------|---------------------|---------------------------|-----------|-------|------------|-------------|
| Trichlorotrifluoroethan | 10.0                | 11.1                      | 111       | 2     | 25         | 28-127      |
| 1,1-Dichloroethene      | 10.0                | 10.6                      | 106       | 3     | 25         | 47-119      |
| trans-1,2-Dichloroethen | 10.0                | 11.2                      | 112       | 2     | 25         | 46-112      |
| 1,1-Dichloroethane      | 10.0                | 12.5                      | 125 *     | 3     | 25         | 57-124      |
| cis-1,2-Dichloroethene  | 10.0                | 13.9                      | 99        | 5     | 25         | 70-139      |
| 1,1,1-Trichloroethane   | 10.0                | 11.1                      | 111       | 3     | 25         | 57-125      |
| Trichloroethene         | 10.0                | 29.4                      | 93        | 11    | 25         | 61-133      |
| Tetrachloroethene       | 10.0                | 11.4                      | 114       | 5     | 25         | 61-132      |
| Chlorobenzene           | 10.0                | 11.5                      | 115       | 5     | 25         | 81-120      |
| 1,3-Dichlorobenzene     | 10.0                | 11.9                      | 119 *     | 5     | 25         | 56-113      |
| 1,4-Dichlorobenzene     | 10.0                | 11.7                      | 117       | 4     | 25         | 62-119      |
| 1,2-Dichlorobenzene     | 10.0                | 11.9                      | 119 *     | 6     | 25         | 69-116      |

\* Value is outside of Anamatrix QC limits

RPD: 0 out of 12 outside limits  
Spike Recovery: 3 out of 24 outside limits

LABORATORY CONTROL SAMPLE  
 EPA METHOD 601/8010  
 ANAMETRIX, INC. (408)432-8192

Project/Case : LABORATORY CONTROL SAMPLE  
 Matrix : WATER  
 SDG/Batch : N/A  
 Date analyzed : 06/02/93

Anamatrix I.D. : W0060293  
 Analyst : TM  
 Supervisor : CP  
 Instrument I.D.: HP24

| COMPOUND                 | SPIKE AMOUNT (ug/L) | AMOUNT RECOVERED (ug/L) | PERCENT RECOVERY | %RECOVERY LIMITS |
|--------------------------|---------------------|-------------------------|------------------|------------------|
| FREON 113                | 20                  | 19.5                    | 98%              | 34 - 128         |
| 1,1-DICHLOROETHENE       | 20                  | 20.7                    | 103%             | 63 - 133         |
| trans-1,2-DICHLOROETHENE | 20                  | 19.5                    | 98%              | 55 - 145         |
| 1,1-DICHLOROETHANE       | 20                  | 21.3                    | 107%             | 49 - 121         |
| cis-1,2-DICHLOROETHENE   | 20                  | 18.8                    | 94%              | 66 - 168         |
| 1,1,1-TRICHLOROETHANE    | 20                  | 20.5                    | 102%             | 72 - 143         |
| TRICHLOROETHENE          | 20                  | 20.6                    | 103%             | 63 - 147         |
| TETRACHLOROETHENE        | 20                  | 20.7                    | 103%             | 60 - 133         |
| CHLOROBENZENE            | 20                  | 20.3                    | 102%             | 70 - 148         |
| 1,3-DICHLOROBENZENE      | 20                  | 21.2                    | 106%             | 49 - 139         |
| 1,4-DICHLOROBENZENE      | 20                  | 20.6                    | 103%             | 70 - 133         |
| 1,2-DICHLOROBENZENE      | 20                  | 20.9                    | 104%             | 69 - 140         |

\* Limits based on data generated by Anamatrix, Inc., August, 1992.



REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MS. JENIFER BEATTY  
LEVINE-FRICKE  
1900 POWELL STREET 12TH FLOOR  
EMERYVILLE, CA 94608

Workorder # : 9305285  
Date Received : 05/27/93  
Project ID : 1649.10  
Purchase Order: N/A  
Department : GC  
Sub-Department: TPH

SAMPLE INFORMATION:

| ANAMETRIX<br>SAMPLE ID | CLIENT<br>SAMPLE ID | MATRIX | DATE<br>SAMPLED | METHOD |
|------------------------|---------------------|--------|-----------------|--------|
| 9305285- 1             | LF-31               | WATER  | 05/26/93        | TPHd   |
| 9305285- 2             | LF-131              | WATER  | 05/26/93        | TPHd   |

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MS. JENIFER BEATTY  
LEVINE-FRICKE  
1900 POWELL STREET 12TH FLOOR  
EMERYVILLE, CA 94608

Workorder # : 9305285  
Date Received : 05/27/93  
Project ID : 1649.10  
Purchase Order: N/A  
Department : GC  
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for this workorder.

Cheryl Balmer  
Department Supervisor

6/9/93  
Date

PR Patel  
Chemist

06/09/93  
Date



TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT  
 EPA METHOD 3510 WITH GC/FID  
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE  
 Matrix : WATER  
 Date Sampled : N/A  
 Date Extracted: 06/03/93  
 Date Analyzed : 06/04/93

Anamatrix I.D. : MU0311F9  
 Analyst : AJP  
 Supervisor : CS  
 Date Released : 06/09/93  
 Instrument I.D.: HP9

| COMPOUND | SPIKE<br>AMT<br>(ug/L) | LCS<br>REC<br>(ug/L) | % REC<br>LCS | LCSD<br>REC<br>(ug/L) | % REC<br>LCSD | RPD | % REC<br>LIMITS |
|----------|------------------------|----------------------|--------------|-----------------------|---------------|-----|-----------------|
| DIESEL   | 1250                   | 700                  | 56%          | 800                   | 64%           | 13% | 47-130          |

\*Quality control established by Anamatrix, Inc.

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MS. JENIFER BEATTY  
LEVINE-FRICKE  
1900 POWELL STREET 12TH FLOOR  
EMERYVILLE, CA 94608

Workorder # : 9305285  
Date Received : 05/27/93  
Project ID : 1649.10  
Purchase Order: N/A  
Department : PREP  
Sub-Department: PREP

SAMPLE INFORMATION:

| ANAMETRIX<br>SAMPLE ID | CLIENT<br>SAMPLE ID | MATRIX | DATE<br>SAMPLED | METHOD |
|------------------------|---------------------|--------|-----------------|--------|
| 9305285- 1             | LF-31               | WATER  | 05/26/93        | 5520BF |
| 9305285- 2             | LF-131              | WATER  | 05/26/93        | 5520BF |

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MS. JENIFER BEATTY  
LEVINE-FRICKE  
1900 POWELL STREET 12TH FLOOR  
EMERYVILLE, CA 94608

Workorder # : 9305285  
Date Received : 05/27/93  
Project ID : 1649.10  
Purchase Order: N/A  
Department : PREP  
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cathy Miller 4/9/93  
Department Supervisor Date

MPO Schitrov 06.09.93  
Chemist Date

ANALYSIS DATA SHEET - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS  
 ANAMETRIX LABORATORY (408) 432-8192

Project I.D. : 1649.10  
 Matrix : WATER  
 Date sampled : 05/26/93  
 Date extracted: 06/04/93  
 Date analyzed : 06/07/93

Anamatrix I.D. : 9305285  
 Analyst : M.P.  
 Supervisor : *cm*  
 Date released : 06/09/93

| Workorder # | Sample I.D.  | Reporting Limit (mg/L) | Amount Found (mg/L) |
|-------------|--------------|------------------------|---------------------|
| 9305285-01  | LF-31        | 5                      | ND                  |
| 9305285-02  | LF-131       | 5                      | ND                  |
| BU0411W4    | METHOD BLANK | 5                      | ND                  |

ND - Not detected above the reporting limit for the method.  
 TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520BF.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.





9705285      10/30      10

## CHAIN OF CUSTODY / ANALYSES REQUEST FORM

|                           |                              |               |                   |
|---------------------------|------------------------------|---------------|-------------------|
| Project No.: 1649.10      | Field Logbook No.:           | Date: 5.26.93 | Serial No.: 11629 |
| Project Name: Yerba Buena | Project Location: Emeryville |               |                   |

| SAMPLER (Signature): Priscott C. Field |         |      |                |                   |                  | ANALYSES |         |            |            |      | SAMPLERS: SCH WEM |      |   |
|--|---------|------|----------------|-------------------|------------------|----------|---------|------------|------------|------|-------------------|------|---|
| SAMPLE NO.                             | DATE    | TIME | LAB SAMPLE NO. | NO. OF CONTAINERS | SAMPLE TYPE      | EPA 601  | EPA 624 | TPH/diesel | oil/grease | 8010 | HOLD              | RUSH | REMARKS   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
| ① LF-31                                | 5.26.93 | 0850 |                | 7                 | H <sub>2</sub> O |          |         | 2          | 2          | 3    |                   |      | Analyses:<br>- TPH as diesel<br>- oil + grease by SM 5520 BF<br>- EPA 8010<br><br>Normal TAT<br><br>Contact Jenifer Beatty<br><br>Ref. #2561C |
| ② LF-131                               | ↓       | 0950 |                | 7                 | ↓                |          |         | 2          | 2          | 3    |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |
|  |         |      |                |                   |                  |          |         |            |            |      |                   |      |   |

|  |               |            |  |               |             |
|--|---------------|------------|--|---------------|-------------|
| RELINQUISHED BY: (Signature) Priscott C. Field | DATE: 5/27/93 | TIME: 1020 | RECEIVED BY: (Signature) Penny S. Carigosa | DATE: 5/27/93 | TIME: 1020  |
| RELINQUISHED BY: (Signature) Penny S. Carigosa | DATE: 5/27/93 | TIME: 1240 | RECEIVED BY: (Signature) [Signature]       | DATE: 5/27/93 | TIME: 12:40 |
| RELINQUISHED BY: (Signature)                   | DATE          | TIME       | RECEIVED BY: (Signature)                   | DATE          | TIME        |
| METHOD OF SHIPMENT: Courier                    | DATE          | TIME       | LAB COMMENTS:                              |               |             |

|   |   |
|---|---|
| Sample Collector: LEVINE-FRICKE<br>1900 Powell Street, 12th Floor<br>Emeryville, Ca 94608<br>(415) 652-4500 | Analytical Laboratory:<br><br>Aramatrix, S.J. |
|---|---|