# Quarterly Monitoring Report for January 1 through March 31, 1994 Former Bashland Property Emeryville, California

April 29, 1994
1649.10

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

LEVINE·FRICKE

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

April 29, 1994 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 January 1 through March 31, 1994, Former Bashland Property, Emeryville, California

Dear Ms. Hugo:

Enclosed is the quarterly monitoring report for January 1 through March 31, 1994, for the former Bashland property, located in Emeryville, California. This report has been prepared on behalf of Catellus Development Corporation ("Catellus") for the redevelopment project at the Yerba Buena/East Baybridge Center Project Site, in accordance with your February 22, 1994 letter to Kimberly Brandt of Catellus. That letter requested continued quarterly monitoring of well LF-31 and analysis of total petroleum hydrocarbons (TPH) as diesel (TPHd), TPH as motor oil (TPHo), and volatile organic compounds (VOCs). The enclosed report presents the results for ground-water monitoring activities conducted in March 1994.

As discussed in the meeting on April 25, 1994, among representatives of the Alameda County Health Care Services Agency (ACHA), the Regional Water Quality Control Board (RWQCB), Catellus, and Levine•Fricke, a ground-water monitoring program will be developed that will monitor nonattainment areas within Area C. The Bashland site, located in the eastern portion of Area C, may be designated as a nonattainment area. We propose to meet with the ACHA and the RWQCB to discuss in detail the ground-water monitoring program for Area C and the Bashland site. It is anticipated that this monitoring program will be on a semiannual basis. Therefore, it is assumed that the next monitoring event for the former Bashland property will be conducted during the third quarter of 1994 (July through September).

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

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

Sincerely,

Jenifer Beatty

Jenifer Beatty
Senior Project Hydrogeologist

cc: Sumadhu Arigala, RWQCB
Kimberly Brandt, Catellus
Pat Cashman, Catellus

CONTENTS

**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
Principal Geologist
California Registered Geologist (4592)

4/29/94
Date

April 29, 1994 LF 1649.10

**QUARTERLY MONITORING REPORT FOR
JANUARY 1 THROUGH MARCH 31, 1994
FORMER BASHLAND PROPERTY, EMERYVILLE, CALIFORNIA**

## 1.0 INTRODUCTION

This report presents results of quarterly ground-water monitoring activities conducted during the period January 1 to March 31, 1994, for the former Bashland property located at 4015 Hollis Street in Emeryville, California (Figure 1). Levine•Fricke conducted this work on behalf of Catellus Development Corporation ("Catellus") in accordance with a February 22, 1994 letter from Ms. Hugo of the ACHA. That letter requested continued quarterly monitoring of well LF-31 and analysis of total petroleum hydrocarbons (TPH) as diesel (TPHd), TPH as motor oil (TPHo), and volatile organic compounds (VOCs).

## 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 the former Bashland property 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 Materials Specialist of the ACHA, and a representative of the EFD were on site to observe tank removal and soil sampling activities. Several small 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. TPHo was 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. Soil beneath and adjacent to the sampling location reporting the 1,500 ppm detection was excavated and removed. 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 the former Bashland property 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 monitoring program, samples collected from well LF-31 also were analyzed periodically for VOCs 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 the former Bashland property (i.e., the Electro-Coatings, Inc., and/or Del Monte sites; Figure 1).

## 3.0 QUARTERLY MONITORING ACTIVITIES CONDUCTED DURING THE PERIOD FROM JANUARY 1 THROUGH MARCH 31, 1994

The activities conducted and the results obtained for January 1 through March 31, 1994, are presented below.

### 3.1 Water-Level Measurement

Depth to water was measured in well LF-31 prior to sampling on March 11, 1994. Depth to water was also measured on March 16, 1994, in wells LF-10, LF-11R, LF-13, LF-31, and LF-32 in Area C of the Yerba Buena/East Baybridge Center Project site ("Area C"). Measurements were collected using an electric water-level sounding probe to the nearest 0.01 foot, relative to the top of the PVC well casing.

### 3.2 Sampling

Ground-water samples were collected for chemical analyses from well LF-31 on March 11, 1994. Before ground-water samples were collected from this well, approximately four well casing 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 on a water-quality sampling sheet. A copy of this sheet is 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 (HCl). The glass vials were filled to capacity, capped, and checked for trapped air bubbles. Samples collected for TPHd analysis were poured into

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

For QA/QC purposes, a duplicate sample (LF-131) was collected and analyzed for VOCs using EPA Method 601. Copies of the laboratory certificates and chain-of-custody form are included in Appendix B.

### 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 and TPHo, and for VOCs using EPA Method 601.

## 4.0 GROUND-WATER ELEVATIONS AND FLOW DIRECTION

The depth to water measured in well LF-31 on March 16, 1994, was 5.69 feet below ground surface, which corresponds to a ground-water elevation of 11.34 feet above mean sea level. This represents a decrease in ground-water elevation of 0.57 foot relative to December 1993 data (Levine·Fricke 1994). Depth to water measured in Area C on March 16, 1994, ranged from 5.35 feet below ground surface (bgs) in wells LF-10 and LF-13, to 6.21 feet bgs in well LF-11R. Ground-water elevation data for Area C of the Site is provided in Figure 2. As indicated in Figure 2, ground-water elevation data collected on March 16, 1994, indicate ground-water flow direction beneath Area C is generally toward the southwest under an average hydraulic gradient of 0.008 foot per foot. Ground-water flow direction beneath the former Bashland property and Area C has historically been to the west-southwest.

## 5.0 ANALYTICAL RESULTS

A historical summary of analytical results for well LF-31 is presented in Table 1. Analytical results for this quarter are generally consistent with previous results reported for well LF-31. TPHd and TPHo were detected at concentrations of 0.110 ppm and 0.210 ppm, respectively. Trichlorethene (0.0054 ppm and 0.006 ppm [duplicate]) and 1,2-dichloroethene (0.003 ppm and 0.0034 ppm [duplicate]) also were detected. Chloroform was detected at concentrations of 0.0012 ppm and 0.0014 ppm in

the primary and duplicate samples, respectively. Chloroform previously has not been detected in ground-water samples collected from well LF-31. The possible presence of chloroform in well LF-31 will be monitored closely during future monitoring events.

Laboratory certificates for ground-water samples are presented in Appendix B.

## 6.0 PROPOSED FUTURE MONITORING ACTIVITIES

Ground-water samples have been collected from well LF-31 during the past five quarters. Analytical results of these samples indicate shallow ground water has not been affected by a possible release of petroleum hydrocarbons, with the exception of TPHd and TPHo. These compounds have been detected at low concentrations of 0.40 ppm (TPHd) and 0.21 ppm (TPHo) or less.

While VOCs have been detected in ground-water samples collected from well LF-31, 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. In addition, no VOC source was identified during removal of the USTs, oil/water separator, or hydraulic lifts formerly located at the former Bashland property. Possible off-site 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 of Levine·Fricke 1993) include the Electro-Coatings, Inc. (ECI), site, located at 1201 Park Avenue, and the Del Monte Plant Number 35 West Parcel site, located at 4202 Hollis Street in Emeryville, California.

As discussed in the meeting on April 25, 1994, among representatives of the Alameda County Health Care Services Agency (ACHA), the Regional Water Quality Control Board (RWQCB), Catellus, and Levine·Fricke, a ground-water monitoring program will be developed that will monitor nonattainment areas within Area C. The Bashland site, located in the eastern portion of Area C, may be designated as a nonattainment area. We propose to meet with the ACHA and the RWQCB to discuss in detail the ground-water monitoring program for Area C and the Bashland site. It is anticipated that this monitoring program will be on a semiannual basis. Therefore, it is assumed that the next monitoring event for the former Bashland property will be conducted during the third quarter of 1994 (July through September).

**REFERENCES**

Alameda County Health Care Services Agency (ACHA). 1994. Correspondence to Ms. Kimberly Brandt of Catellus Development Corporation. Subject: status of soil and groundwater investigation. February 22.

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.

Levine•Fricke, Inc. 1994. Quarterly Monitoring Report for October 1 through December 31, 1993, Former Bashland Property, Emeryville, California. January 31.

TABLE 1

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

| Date Sampled | Lab | | TRPH | THPd | THPo | THPg | Benzene | Toluene | Ethyl-benzene | Total Xylenes | TCE | 1,2-DCE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12-Feb-93 | ANA | (1) | <5 | <0.05 | NA | <0.05 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | NA | NA |
| 26-May-93 | ANA | | <5 | 0.200 | NA | NA | NA | NA | NA | NA | 0.020 | 0.0039 |
| duplicate | | | <5 | 0.310 | NA | NA | NA | NA | NA | NA | 0.020 | 0.0034 |
| 14-Jul-93 | ANA | (2) | <5 | 0.150 | NA | NA | NA | NA | NA | NA | 0.0073 | 0.0024 |
| duplicate | AEN | | <1 | 0.400 | NA | NA | NA | NA | NA | NA | 0.010 | 0.002 |
| 09-Dec-93 | ANA | | <5 | 0.200 | 0.100 | <0.05 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | NA | NA |
| 11-Mar-94 | ANA | (3) | NA | 0.110 | 0.210 | NA | NA | NA | NA | NA | 0.0054 | 0.003 |
| duplicate | ANA | (4) | NA | NA | NA | NA | NA | NA | NA | NA | 0.006 | 0.0034 |

Data entered by MEK/19-Apr-94. Data proofed by WEM.

ANA - Anametrix, Inc., of San Jose, California
AEN - American Environmental Network of Pleasant Hill, California
TRPH - Total recoverable petroleum hydrocarbons as oil and grease, analyzed using Standard Methods 5520BF.
TPHd - Total petroleum hydrocarbons as diesel, analyzed using EPA Method 3510.
THPo - Total petroleum hydrocarbons as oil, analyzed using EPA Method 3510.
THPg - Total petroleum hydrocarbons as gasoline, analyzed using EPA Method 3550.
Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8020.
TCE - Trichloroethene, analyzed using EPA Method 8010.
1,2-DCE - 1,2-dichloroethene, analyzed using EPA Method 8010.
NA - Not analyzed

(1) 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.

(2) Tetrachloroethene (PCE) detected at a concentration of 0.0063 ppm.

(3) Chloroform detected at 0.0012 ppm.

(4) Chloroform detected at 0.0014 ppm.

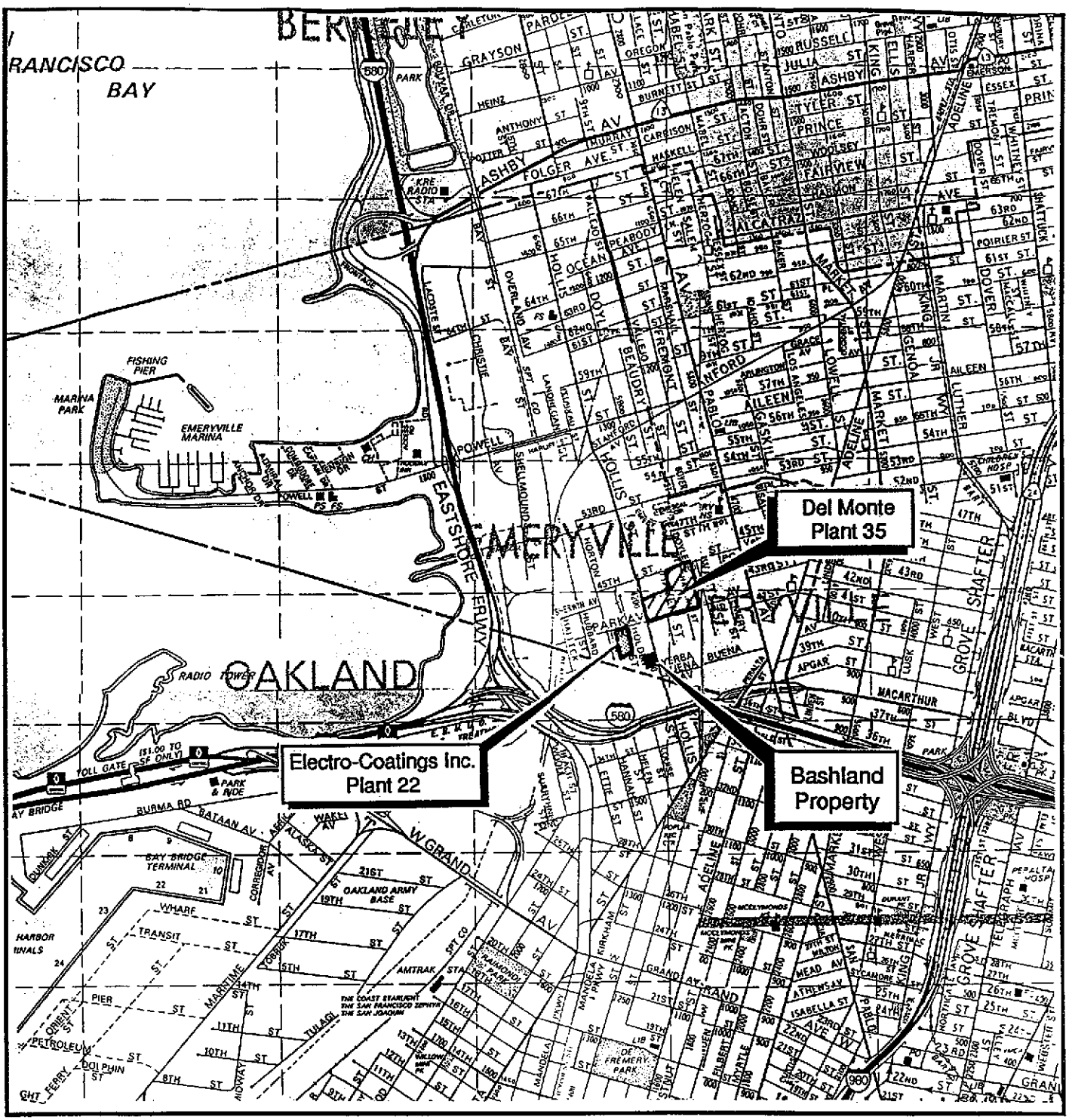



**Figure 1: SITE LOCATION MAP**
BASHLAND PROPERTY SITE

Project No. 1649.10

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

JJB28JUL93◀RYL

Park Avenue

Halleck Street

Hubbard Streett

Horton Streett

Holden Streett

Hollis Street

Beach Street

Electro-Coatings, Inc.

Bldg.

Warehouse

FORMER BASHLAND BUILDING

FORMER UNDERGROUND STORAGE TANKS

FORMER UNDERGROUND STORAGE TANKS

FORMER UNDERGROUND STORAGE TANK

FORMER BAY AREA WAREHOUSE

FORMER M & N WAREHOUSE

OAKLAND TERMINAL RAILWAYS

LF-10 6.68

LF-11 6.15

LF-11R

LF-12

LF-13 3.79

LF-16

LF-31 11.34

LF-32 6.99

11

10

9

8

7

6

5

4

EXPLANATION

- Monitoring well location
- Wells abandoned in July or September 1993
- Former building location
- 11.34 Ground-water elevation (feet above mean sea level)
- 6 Ground-water elevation contour (feet above mean sea level); dashed where inferred

N

0 50 100 150 FEET

Figure 2 :

SHALLOW GROUND-WATER ELEVATION CONTOURS
MARCH 16, 1994
AREA C
YERBA BUENA PROJECT SITE

Project No. 1649

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS, & APPLIED SCIENTISTS

1649B047.JJB:DAT 042294

1649QG01.WEM:DAT/EM 042294

LEVINE•FRICKE

# WATER-QUALITY SAMPLING INFORMATION

Project Name Yerba Buena/Backland
Project No. 1649.10
Date 3.11.94
Sample No. LF·31
LF·131
Samplers Name SCH
Sampling Location Emeryville
Sampling Method Cent. pump/Teflon bailer
Analyses Requested 8010, TPHd
Number and Types of Sample Bottles used 4 VOA, 2 amber
Method of Shipment courier

**GROUND WATER**

Well No. LF·31
Well Diameter (in.) 4
Depth to Water, Static (ft) 5.57
Water in Well Box no
Well Depth (ft) 20.3
Height of Water Column in Well 14.73
Water Volume in Well 9.57 ≈ 10

**SURFACE WATER**

Stream Width
Stream Depth
Stream Velocity
Rained recently?
Other

2-inch casing = 0.16 gal/ft
4-inch casing = 0.65 gal/ft
5-inch casing = 1.02 gal/ft
6-inch casing = 1.47 gal/ft

20.30
5.57
1473
65
7365
88380
9575

80% = .2 × 14.73 + 5.57
= 2.94 → 8.51

LOCATION MAP

| TIME | DEPTH TO WATER (feet) | VOLUME WITHDRAWN (gallons) | TEMP (deg. C) | pH (S.U.) | COND (umhos/cm) | OTHER | | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 1025 | | | | | | | | Start |
| 1027 | | 10 | 17.4 | 7.32 | 1226 | | | V. Sl. Turbid |
| 1029 | | 20 | 17.5 | 7.26 | 1265 | | | Sl. Turbid/stop |
| 1031 | | | | | | | | Start |
| 1033 | | 30 | 17.9 | 7.07 | 1249 | | | Sl. Turbid/Dustrd./stop |
| 1043 | | | | | | | | start |
| 1047 | | 40 | 17.9 | 7.06 | 1169 | | | Sl. Turbid/off |
| | | | | | | | | |
| 1115 | 7.02 | | | | | | | |
| 1120 | | | | | | | | Sample LF·31 |
| 1130 | | | | | | | | Dup LF·131 |
| | | | | | | | | |

Suggested Method for Purging Well

# Inchcape Testing Services
## Anametrix Laboratories

1961 Concourse Drive
Suite E
San Jose, CA 95151
Tel: 408-432-8192
Fax: 408-432-8198


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

Workorder # : 9403190
Date Received : 03/11/94
Project ID : 1649.10
Purchase Order: N/A

The following samples were received at Anametrix for analysis :

| ANAMETRIX ID | CLIENT SAMPLE ID |
|---|---|
| 9403190- 1 | LF-31 |
| 9403190- 2 | LF-131 |

This report is organized in sections according to the specific Anametrix laboratory group which performed the analysis(es) and generated the data.

The results contained within this report relate to only the sample(s) tested. Additionally, these data should be considered in their entirety and Anametrix cannot be responsible for the detachment, separation, or otherwise partial use of this report.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234.

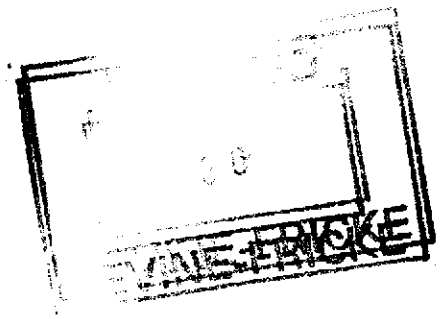
If you have any further questions or comments on this report, please call us as soon as possible. Thank you for using Anametrix.

Todd Deinger for
Doug Robbins
Laboratory Director

Date 3/22/94

COPY

This report consists of ____ pages.



# ANAMETRIX REPORT DESCRIPTION
# GC

## Organic Analysis Data Sheets (OADS)

OADS forms contain tabulated results for target compounds. The OADS are grouped by method and, within each method, organized sequentially in order of increasing Anametrix ID number.

## Surrogate Recovery Summary (SRS)

SRS forms contain quality assurance data. An SRS form will be printed for each method, if the method requires surrogate compounds. They will list surrogate percent recoveries for all samples and any method blanks. Any surrogate recovery outside the established limits will be flagged with an "*", and the total number of surrogates outside the limits will be listed in the column labelled "Total Out".

## Matrix Spike Recovery Form (MSR)

MSR forms contain quality assurance data. They summarize percent recovery and relative percent difference information for matrix spikes and matrix spike duplicates. This information is a statement of both accuracy and precision. Any percent recovery or relative percent difference outside established limits will be flagged with an "*", and the total number outside the limits will be listed at the bottom of the page. Not all reports will contain an MSR form.

## Qualifiers

Anametrix uses several data qualifiers (Q) in its report forms. These qualifiers give additional information on the compounds reported. They should help a data reviewer to verify the integrity of the analytical results. The following is a list of qualifiers and their meanings:

- U - Indicates that the compound was analyzed for, but was not detected at or above the specified reporting limit.
- B - Indicates that the compound was detected in the associated method blank.
- J - Indicates that the compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value. Tentatively identified compounds will always have a "J" qualifier because they are not included in the instrument calibration.
- E - Indicates that the reported amount exceeded the linear range of the instrument calibration.
- D - Indicates that the compound was detected in an analysis performed at a secondary dilution.

Absence of a qualifier indicates that the compound was detected at a concentration at or above the specified reporting limit.

**REPORTING CONVENTIONS**

- Due to a size limitation in our data processing step, only the first eight (8) characters of your project ID and sample ID will be printed on the report forms. However, the report cover letter and report summary pages display up to twenty (20) characters of your project and sample IDs.
- Amounts reported are gross values, i.e., not corrected for method blank contamination.

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

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

Workorder # : 9403190
Date Received : 03/11/94
Project ID : 1649.10
Purchase Order: N/A
Department : GC
Sub-Department: VOA

SAMPLE INFORMATION:

| ANAMETRIX SAMPLE ID | CLIENT SAMPLE ID | MATRIX | DATE SAMPLED | METHOD |
|---|---|---|---|---|
| 9403190- 1 | LF-31 | WATER | 03/11/94 | 601 |
| 9403190- 2 | LF-131 | WATER | 03/11/94 | 601 |

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

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

Workorder # : 9403190
Date Received : 03/11/94
Project ID : 1649.10
Purchase Order: N/A
Department : GC
Sub-Department: VOA

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

M. Hasseinian 3/18/94
Department Supervisor Date

Taghi Memarzadeh 3/18/94
Chemist Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 601
ANAMETRIX, INC. (408)432-8192

oject ID : 1649.10
mple ID : LF-31
latrix : WATER
ate Sampled : 3/11/94
te Analyzed : 3/17/94
nstrument ID : HP24

Anametrix ID : 9403190-01
Analyst : TM
Supervisor : DL

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 | 3.0 | |
| 67-66-3 | Chloroform | .50 | 1.2 | |
| 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 | 5.4 | |
| 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 | .50 | ND | U |
| 106-46-7 | 1,4-Dichlorobenzene | .50 | ND | U |
| 95-50-1 | 1,2-Dichlorobenzene | .50 | ND | U |

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 601
ANAMETRIX, INC. (408)432-8192

Project ID : 1649.10
Sample ID : LF-131
Matrix : WATER
Date Sampled : 3/11/94
Date Analyzed : 3/17/94
Instrument ID : HP24

Anametrix ID : 9403190-02
Analyst : TM
Supervisor : DL

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 | 3.4 | |
| 67-66-3 | Chloroform | .50 | 1.4 | |
| 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 | 6.0 | |
| 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 | .50 | ND | U |
| 106-46-7 | 1,4-Dichlorobenzene | .50 | ND | U |
| 95-50-1 | 1,2-Dichlorobenzene | .50 | ND | U |

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 601
ANAMETRIX, INC. (408)432-8192

Project ID : 1649.1
Sample ID : VBLKB1
Matrix : WATER
Date Sampled : 0/ 0/ 0
Date Analyzed : 3/17/94
Instrument ID : HP24

Anametrix ID : BM1702I1
Analyst : TM
Supervisor : [illegible]

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 | .50 | ND | U |
| 106-46-7 | 1,4-Dichlorobenzene | .50 | ND | U |
| 95-50-1 | 1,2-Dichlorobenzene | .50 | ND | U |

SURROGATE RECOVERY SUMMARY -- EPA METHOD 601
ANAMETRIX, INC. (408)432-8192

Project ID : 1649.10
Matrix : LIQUID

Anametrix ID : 9403190
Analyst : TM
Supervisor : DL

| | SAMPLE ID | SU1 | SU2 | SU3 |
|---|---|---|---|---|
| 1 | VBLKB1 | 83 | 95 | 94 |
| 2 | LF-31 | 89 | 96 | 94 |
| 3 | LF-31MS | 95 | 104 | 105 |
| 4 | LF-31MSD | 96 | 109 | 107 |
| 5 | LF-131 | 93 | 99 | 105 |
| 6 | | | | |
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| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |

| | QC LIMITS |
|---|---|
| SU1 = Bromochloromethane | (56- 99) |
| SU2 = 1-Chloro-2-fluorobenze | (73-110) |
| SU3 = 2-Bromochlorobenzene | (65-108) |

* Values outside of Anametrix QC limits

MATRIX SPIKE RECOVERY FORM -- EPA METHOD 601
ANAMETRIX, INC. (408)432-8192

Project ID : 1649.10
Sample ID : LF-31
Matrix : WATER
Date Sampled : 3/11/94
Date Analyzed : 3/17/94
Instrument ID : HP24

Anametrix ID : 9403190-01
Analyst : TM
Supervisor : DL

| COMPOUND | SPIKE ADDED (ug/L ) | SAMPLE CONCENTRATION (ug/L ) | MS CONCENTRATION (ug/L ) | MS % REC | %REC LIMITS |
|---|---|---|---|---|---|
| Trichlorotrifluoroethan | 10.0 | .0 | 8.1 | 81 | 42-111 |
| 1,1-Dichloroethene | 10.0 | .0 | 9.1 | 91 | 47-128 |
| trans-1,2-Dichloroethen | 10.0 | .0 | 9.8 | 98 | 63-110 |
| 1,1-Dichloroethane | 10.0 | .0 | 10.6 | 106 | 72-128 |
| cis-1,2-Dichloroethene | 10.0 | 3.0 | 12.2 | 92 | 62-126 |
| 1,1,1-Trichloroethane | 10.0 | .0 | 9.0 | 90 | 65-128 |
| Trichloroethene | 10.0 | 5.4 | 12.1 | 67 | 64-115 |
| Tetrachloroethene | 10.0 | .0 | 8.5 | 85 | 64-111 |
| Chlorobenzene | 10.0 | .0 | 9.1 | 91 | 75-124 |
| 1,3-Dichlorobenzene | 10.0 | .0 | 8.8 | 88 | 68-119 |
| 1,4-Dichlorobenzene | 10.0 | .0 | 8.9 | 89 | 72-125 |
| 1,2-Dichlorobenzene | 10.0 | .0 | 9.2 | 92 | 70-131 |

| COMPOUND | SPIKE ADDED (ug/L ) | MSD CONCENTRATION (ug/L ) | MSD % REC | % RPD | RPD LIMITS | %REC LIMITS |
|---|---|---|---|---|---|---|
| Trichlorotrifluoroethan | 10.0 | 7.9 | 79 | 3 | 25 | 42-111 |
| 1,1-Dichloroethene | 10.0 | 9.0 | 90 | 1 | 25 | 47-128 |
| trans-1,2-Dichloroethen | 10.0 | 9.9 | 99 | 1 | 25 | 63-110 |
| 1,1-Dichloroethane | 10.0 | 11.1 | 111 | 4 | 25 | 72-128 |
| cis-1,2-Dichloroethene | 10.0 | 12.6 | 96 | 4 | 25 | 62-126 |
| 1,1,1-Trichloroethane | 10.0 | 9.2 | 92 | 2 | 25 | 65-128 |
| Trichloroethene | 10.0 | 12.8 | 75 | 11 | 25 | 64-115 |
| Tetrachloroethene | 10.0 | 8.8 | 88 | 4 | 25 | 64-111 |
| Chlorobenzene | 10.0 | 9.7 | 97 | 7 | 25 | 75-124 |
| 1,3-Dichlorobenzene | 10.0 | 9.0 | 90 | 2 | 25 | 68-119 |
| 1,4-Dichlorobenzene | 10.0 | 9.1 | 91 | 2 | 25 | 72-125 |
| 1,2-Dichlorobenzene | 10.0 | 9.4 | 94 | 3 | 25 | 70-131 |

* Value is outside of Anametrix QC limits

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

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

Sample I.D. : LABORATORY CONTROL SAMPLE
Matrix : WATER
SDG/Batch : 03190
Date analyzed : 03/17/94

Anametrix I.D. : MM1701I1
Analyst : TM
Supervisor : [illegible]
Instrument I.D.: HP24

| COMPOUND | SPIKE AMOUNT (ug/L) | AMOUNT RECOVERED (ug/L) | PERCENT RECOVERY | %RECOVERY LIMITS |
|---|---|---|---|---|
| Trichlorotrifluoroethane | 10 | 10.1 | 101% | 65 - 116 |
| 1,1-Dichloroethene | 10 | 10.8 | 108% | 64 - 125 |
| trans-1,2-Dichloroethene | 10 | 11.1 | 111% | 77 - 113 |
| 1,1-Dichloroethane | 10 | 11.5 | 115% | 85 - 129 |
| cis-1,2-Dichloroethene | 10 | 11.0 | 110% | 78 - 130 |
| 1,1,1-Trichloroethane | 10 | 10.4 | 103% | 83 - 125 |
| Trichloroethene | 10 | 10.0 | 100% | 76 - 124 |
| Tetrachloroethene | 10 | 9.8 | 98% | 80 - 118 |
| Chlorobenzene | 10 | 9.7 | 97% | 81 - 130 |
| 1,3-Dichlorobenzene | 10 | 9.6 | 96% | 82 - 115 |
| 1,4-Dichlorobenzene | 10 | 9.6 | 96% | 85 - 122 |
| 1,2-Dichlorobenzene | 10 | 9.7 | 97% | 86 - 122 |

* Limits based on data generated by Anametrix, Inc., December, 1993.

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

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

Workorder # : 9403190
Date Received : 03/11/94
Project ID : 1649.10
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

| ANAMETRIX SAMPLE ID | CLIENT SAMPLE ID | MATRIX | DATE SAMPLED | METHOD |
|---|---|---|---|---|
| 9403190- 1 | LF-31 | WATER | 03/11/94 | TPHd |

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

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

Workorder # : 9403190
Date Received : 03/11/94
Project ID : 1649.10
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for this sample.

Cheryl Balmer 3/21/94
Department Supervisor Date

[signature] 03/21/94.
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9403190
Matrix : WATER
Date Sampled : 03/11/94
Date Extracted: 03/16/94

Project Number : 1649.10
Date Released : 03/21/94
Instrument I.D.: HP9

| Anametrix I.D. | Client I.D. | Date Analyzed | Reporting Limit (ug/L) | Amount Found (ug/L) | Surrogate %Rec |
|---|---|---|---|---|---|
| 9403190-01 | LF-31 | 03/19/94 | 50 | 110 | 79% |
| BM1611F9 | METHOD BLANK | 03/18/94 | 50 | ND | 69% |

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
The surrogate recovery limits for O-terphenyl are 30-130%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as C12-C22 is determined by GCFID following sample extraction by EPA Method 3510.

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

Irma Shor 3/22/94
Analyst Date

Cheryl Balmer 3/22/94
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9403190
Matrix : WATER
Date Sampled : 03/11/94
Date Extracted: 03/16/94

Project Number : 1649.10
Date Released : 03/21/94
Instrument I.D.: HP9

| Anametrix I.D. | Client I.D. | Date Analyzed | Reporting Limit (ug/L) | Amount Found (ug/L) | Surrogate %Rec |
|---|---|---|---|---|---|
| 9403190-01 | LF-31 | 03/19/94 | 50 | 210 | 79% |
| BM1611F9 | METHOD BLANK | 03/18/94 | 50 | ND | 69% |

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
The surrogate recovery limits for O-terphenyl are 30-130%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as C22-C36 is determined by GCFID following sample extraction by EPA Method 3510.

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

Lucia Shor 3/22/94
Analyst Date

Cheryl Bateman 3/23/94
Supervisor 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: 03/16/94
Date Analyzed : 03/18/94

Anametrix I.D. : MM1611F9
Analyst : IS
Supervisor : [illegible]
Date Released : 03/21/94
Instrument I.D.: HP9

| COMPOUND | SPIKE AMT (ug/L) | LCS REC (ug/L) | % REC LCS | LCSD REC (ug/L) | % REC LCSD | RPD | % REC LIMITS |
|---|---|---|---|---|---|---|---|
| DIESEL | 1250 | 980 | 78% | 1000 | 80% | 2% | 47-130 |
| SURROGATE | | | 83% | | 85% | | 30-130 |

* Quality control limits established by Anametrix, Inc.

# CHAIN OF CUSTODY / ANALYSES REQUEST FORM

| | | | |
|---|---|---|---|
| Project No.: 1649.10 | Field Logbook No.: | Date: 3-11-94 | Serial No.: No 12879 |
| Project Name: Yerba Buena (Bashland) | Project Location: Emeryville, CA | | |
| Sampler (Signature): Prscott C. Hudd | | | Samplers: SCH |

| SAMPLES | | | | | | ANALYSES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE NO. | DATE | TIME | LAB SAMPLE NO. | NO. OF CONTAINERS | SAMPLE TYPE | EPA 601 | EPA 624 | TPH diesel | | | HOLD | RUSH | REMARKS |
| (1) | LF-31 | 3-11-94 | 1120 | | 4 | $H_2O$ | 2 | | 2 | | | | | Normal TAT. |
| (2) | LF-131 | ↓ | 1130 | | 2 | ↓ | 2 | | | | | | | |
| | | | | | | | | | | | | | | Invoice Catellus. |
| | | | | | | | | | | | | | | Fax/cc results to |
| | | | | | | | | | | | | | | Jcoiter Beatty. |

| | | | | | |
|---|---|---|---|---|---|
| RELINQUISHED BY: (Signature) Prscott C. Hudd | DATE 3/11/94 | TIME 1540 | RECEIVED BY: (Signature) Bonny L. Cenizos | DATE 3/11/94 | TIME 1540 |
| RELINQUISHED BY: (Signature) Bonny L. Cenizos | DATE 3/11/94 | TIME 1540 | RECEIVED BY: (Signature) | DATE 3/11/94 | TIME 17:40 |
| RELINQUISHED BY: (Signature) | DATE | TIME | RECEIVED BY: (Signature) | DATE | TIME |
| METHOD OF SHIPMENT: Courier | DATE | TIME | LAB COMMENTS: | | |

Sample Collector:
LEVINE-FRICKE
1900 Powell Street, 12th Floor
Emeryville, California 94608
(510) 652-4500

Analytical Laboratory:
Anametrix, San Jose, CA

Shipping Copy (White) Lab Copy (Green) File Copy (Yellow) Field Copy (Pink) FORM NO. 86/COC/ARF